Borough and Port of Lancaster.

Annual and Quarterly Reports

OF THE

MEDICAL OFFICER OF HEALTH

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AND

INSPECTOR OF NUISANCES,

F. W. SMITH.

Associate of the Sanitary institute,

FOR THE YEAR 1900.

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Borough of Lancaster.

Annual Report of Medical Officer of Health.

To the Mayor, Aldermen, and Councillors being the Urban
Sanitary Authority for the Borough of Lancaster.

Mr. Mayor, Mr. Chairman, and Gentlemen.

I have much pleasure in presenting to you this the Fifteenth Annual Report, which in compliance with the order of the Local Government Board I have had the honour of preparing.

During the year 1900 the Bill which the Corporation promoted in Parliament has become law. This is distinctly a matter for congratulation, as it empowers the carrying out of various improvements which will make the Borough not only healthier but a more desirable and convenient place of residence.

Amongst other changes which have been thus brought about is the enlargement of the area of the Borough, which has been increased to 3610 acres. The rateable value, which in 1899 was £152,016, now stands at £180,087. The gross estimated population at the end of the year is computed at 46,544, and for April 1st, 1901, as near as I can estimate the population will amount to 46,901. For the purposes of this Annual Report, however, the gross population is estimated to be 42,580, and the corrected population 39,198 at the middle of the year 1900.

The Census which will be taken in the Spring of 1901 will give us the true population, and it will be interesting to note the difference between the estimated and censal population.

More than once I have suggested to this Authority the desirability of taking part in the demand for a Quinquennial Census. Ten years is, in my opinion, far too long for a Sanitary Authority to be dependent upon the estimate made by their Medical Officer of Health for the computation of the various vital statistics. It is for many purposes highly desirable that the true population of each town or district should be accurately ascertained at least every five years. I do not think too much reliance should be placed upon the estimation of population by such imperfect methods as are at the command of a Medical Officer of Health. If the Census were taken every five years these statistics would give a truer representation of the actual facts.

Preparations are being made for actively pushing forward the various matters, permission for which has been obtained.

The construction of the Tramways will shortly be undertaken. The tuberculosis powers have been advertised, and most of the other matters are in hand.

Deaths.

The total number of deaths registered in the Borough during the year 1900 was 780—equal to a gross annual death-rate of 18·31 per 1,000 of gross population. Of these deaths 378 were those of males, and 402 those of females.

In 1899 there were registered 806 deaths, of which 393 were those of males, and 413 those of females. The gross annual death-rate being 19·83 per 1,000 of gross population.

In the Borough alone (without the six principal Institutions, which are for the most part occupied by non-residents or people brought sick into the district), the deaths in 1900 numbered 550—equal to an annual corrected death-rate of 14·05 per 1,000 of corrected population.

In 1899 the number of such deaths was 570—equal to an annual corrected death-rate of 15·10 per 1,000 of corrected population.

Of the 550 deaths occurring in the town, 276 were those of males and 274 those of females. 169 occurred in infants under 1 year of age, 79 in children between 1 and 5, 292 in persons over 5 and under 65 years, and 100 in persons over 65 years of age.

The following table shows the deaths arranged in the usual age groups for last year and this, and, for the sake of comparision, is given the average figures for the last ten years :—

Deaths.	Average for past ten years.	1899	1900
Under one year	152	197	169
Over 1 and under 5	73	88	79
Over 5 and under 15	18	17	34
Over 15 and under 25 ...	21	13	16
Over 25 and under 65 ...	132	148	152
Over 65 years	112	107	100
Total deaths		570	550

Infantile Deaths.

The 169 deaths of children under one year old is a decrease of 28 on the numbers for the year 1899, and are equal to an infantile death-rate of 170 per 1000 registered births.

A better appreciation of the true state of affairs will be more easily obtained, if the death-rate per 1000 registered births is given.

This table shows the average rate of such deaths for the past ten years, and for 1899 and 1900.

Average Infantile Death-rate per 1000 Registered Births.	
For past 10 years	160
For 1899	211
For 1900	170

From the above it may be seen that although the infantile mortality has fallen from the appalling figures of 1899, it is still ten above the average of the past decennial period.

This high death-rate falls chiefly upon the children of the so-called working classes, and is due in a great measure to improper feeding and various causes of a preventible character.

Of the total 169 deaths at this age which occurred in the town, 97 were accounted for as follows:—

(*a*) Diarrhœa and other inflammatory diseases of the bowels, 43.

(*b*) Bronchitis, Pneumonia, and Pleurisy, 37.

(*c*) Premature births, 17.

Now, although I am aware that my conclusions are only approximately correct, yet I think I am entitled to say that, in my opinion, the (*a*) deaths are chiefly due to improper feeding, the (*b*) deaths to exposure, and the (*c*) deaths to the mothers continuing their work, even when of an arduous character, during the concluding months of pregnancy.

Added to the above causes, is the lack of proper ventilation in the houses, especially in the bedrooms. I would also draw attention to the fact that, owing to the mothers returning to their work after the birth of their children, artificial feeding is in such cases necessarily resorted to, and this is a frequent cause of disease and death to the infants. In previous years I have attempted to point out some means of lessening this infantile death-rate, which is far higher than it should be for a town of the size and character of Lancaster.

Two years ago I pointed out how successfully Dr. Dufour, of Fécamp, had reduced the infantile mortality of that town. Since then St. Helens has adopted the plan, and is putting sterilised, humanised milk within the reach of persons who cannot afford to pay more for it than for raw milk.

Might I suggest that a deputation be sent to St. Helens to inquire into the system on the spot, with a view to its adoption in this town before the diarrhœa season commences.

In former reports, I have also pointed out the dangers of taking infants out of warm beds at an early hour in the morning, to place them out to nurse, whilst the mothers go to work. Again, at the end of the day, long after dark, how often do we meet infants in arms and in perambulators being taken home by their parents. This latter condition prevails chiefly amongst the younger parents whose pleasure in each others society has not yet begun to wane, but however admirable such marital affection may be, the fact still remains that the infants should at such times be indoors. The parents of the well-to-do classes have not the same temptations, and consequently their children are seldom or never taken out at such times.

With regard to the third class of deaths to which I have directed attention, I am afraid nothing much can be accomplished without legislation, as it is largely governed by the necessities of the struggle for existence, and occurs most amongst people of the better sort who are striving to make their way in the world.

This Table gives the figures I have mentioned side by side for comparison :—

Year.	Number of Deaths under 1 year.	Number of Births in each year.	Percentage of Infantile Deaths to Births.	Birth-rate.	Death-rate.
1890	154	923	16·68	32·65	19·33
1891	153	977	15·66	31·29	19·52
1892	150	947	15·83	32·08	17·95
1893	165	991	16·64	32·34	17·23
1894	112	1008	12·33	31·49	13·00
1895	138	936	14·74	28·40	15·66
1896	152	938	16·20	27·46	14·02
1897	145	957	15·15	27·07	13·91
1898	162	1023	15·83	24·94	14·09
1899	197	930	21·18	24·63	15·10
Average of the last 10 years.	152	963	16·02	29·23	15·98
1900	169	989	17·08	25.23	14·05

Table showing the Monthly Deaths of Children under 1 year of age during 1900, and also the causes :—

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Whooping Cough	...	...	...	..	...	...	...	...	1	...	...	3	4
Diarrhœa	...	...	...	...	1	1	1	6	6	5	...	1	21
Enteritis	...	...	1	...	...	...	...	5	8	2	5	1	22
Other Septic Diseases	...	...	...	...	...	...	...	...	...	...	..	1	1
Phthisis	...	..	...	...	...	...	...	...	...	...	...	1	1
Other Tubercular Diseases	...	...	1	2	3	...	...	1	...	3	...	...	10
Bronchitis	1	5	2	3	4	3	1	1	1	2	4	4	31
Pneumonia	...	...	1	...	..	...	...	1	...	1	..	1	4
Other Respiratory Diseases	...	...	...	1	...	...	...	1	...	...	..	...	2
Venereal Diseases	...	...	...	1	...	..	...	...	...	...	1	...	2
Premature Birth	...	...	1	2	3	3	1	2	3	...	...	2	17
Diseases and Accidents of Parturition	...	..	...	...	...	...	1	...	...	...	1	...	2
Heart Disease	...	1	1	...	...	...	...	...	...	...	...	...	2
Accidents	...	...	...	...	...	...	...	...	...	...	1	...	1
All other Diseases	4	4	4	4	5	2	4	6	10	4	6	4	57
													177

Of these deaths 8 occurred in the various Institutions of the town, thus reducing the number for the town proper to 169.

Table showing deaths under 1 year and under 5 years for last 10 years, comparing them with total deaths for last 10 years, and giving percentage of deaths under 5 years of the total population:—

	Under 1 year.	Over 1 year and under 5 years.	Total Deaths under 5 years.	Total Deaths.	Percentage of deaths under 5 years of total population.
1891	153	78	231	553	·81
1892	150	92	242	530	·81
1893	165	100	265	528	·86
1894	112	40	152	413	·47
1895	138	65	203	516	·61
1896	152	48	200	479	·58
1897	145	92	237	492	·67
1898	162	65	227	515	·62
1899	197	88	285	570	·75
1900	169	79	248	550	·63

The preceeding table shows the deaths at the various age periods, and by reference to it, information as to the position of our death-rate may be had at a glance.

The deaths of children over 1 year and under 5 years of age amounted to 79, whilst for the preceeding year the number was 88.

These 79 deaths, added to the 169 which occurred under 1 year, make a total of 248 deaths of children under 5 years of age. This is slightly better than last year, when, as I showed in my report, exactly half the total deaths were those of children under 5 years of age.

The deaths of persons over 5 and under 15 number in this year 34, an increase of exactly 100 per cent. over the number for 1899.

The deaths of persons over 15 and under 25 years are 16, an increase of 3 over last year.

The deaths of persons over 25 and under 65 years of age are 152, being 4 more than in 1899.

The deaths of persons over 65 years of age number 100, being a decline of 7 upon the figures for last year.

The deaths in the six principal Institutions of the town, whose population is brought to the town for medical and surgical treatment in most cases, are as follows for the year 1900 :—

The County Lunatic Asylum ...	132
,, Royal Lancaster Infirmary ...	45
,, Union Workhouse	44
,, Bowerham Barracks	5
,, Ripley Hospital	2
,, Castle (Prison)	2
	230

In 1899 the numbers were :—

The County Lunatic Asylum ...	155
,, Royal Lancaster Infirmary ...	33
,, Union Workhouse	48
,, Bowerham Barracks	0
,, Ripley Hospital	0
,, Castle (Prison)	0
	236

showing a decrease of 6 such deaths.

Zymotic Deaths.

Deaths during 1900 from the seven principal zymotic diseases numbered 81, namely :—

Measles	6
Scarlet Fever	2
Whooping Cough	5
Diphtheria	37
Enteric Fever	3
Diarrhœa	27
Puerperal Fever	1
	81

equal to an annual zymotic death-rate of 2·06 per 1,000 of population.

In 1899 there were 131 such deaths, namely :—

Measles	29
Diarrhœa	73
Enteric Fever	7
Scarlet Fever	4
Whooping Cough	11
Puerperal Fever	2
Diphtheria	5
	131

equal to an annual zymotic death-rate of 3·47 per 1,000 of population.

It will be seen from the foregoing that a considerable improvement has taken place in these deaths compared with those of last year, despite the fact that in 1900 37 deaths occurred from Diphtheria alone.

The improvement has occurred chiefly in Diarrhœa and Measles, in which two diseases alone there has been a decrease of 69 fatal cases.

The following table enables a comparison to be made between the zymotic deaths, the zymotic death-rate, other deaths, total deaths, and the gross death-rate averaged for the last ten years, and these same rates for 1900:—

	Zymotic Deaths.	Zymotic Death-rate.	Deaths other than Zymotics.	Total Deaths.	Gross Death-rate.
Average last 10 years.	70	2·03	668	738	21·05
1900	94	2·20	686	780	18·31

From the above it will be seen that the figures for 1900 are much above the average, and as I said before, this is due to the fatality resulting from the epidemic of diphtheria which visited the town in 1900.

Measles, although prevalent during the latter portion of the year, has not produced many fatal cases.

The time of year when these Zymotic Deaths occurred is shown as follows:—

	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Enteric Fever.	Diarrhœa.	Puerperal Fever.	Totals.
January	...	..	...	...	...	...	...	...
February	1	...	...	1	...	...	...	2
March	...	...	...	1	...	1	...	2
April	...	..	...	8	1	1	...	10
May	...	...	...	4	...	1	...	5
June	1	...	...	4	...	1	...	6
July	1	...	...	3	...	2	1	7
August	...	1	...	1	...	6	...	8
September	...	...	1	3	1	9	...	14
October	...	...	...	8	1	5	...	14
November	1	...	...	2	...	...	...	3
December	2	1	4	2	...	1	...	10
Totals	6	2	5	37	3	27	1	81

It may be here pointed out that the diarrhœa deaths have for the most part occurred in the autumn months, the diphtheria deaths in the spring and autumn, and the measles and whooping-cough deaths in the winter and spring months.

In addition to calculating the death-rate in the usual manner I have again worked it out on the basis of the percentage of deaths under 5 years to the births.

Calculated in this manner it appears very high, but it is stated to give a truer presentment of the actual state of affairs than the more usual method.

The death-rate calculated in this manner is 25·07 (as compared with 30·64 in 1899), whilst the death-rate calculated by the proportion borne by the deaths to the population is 14·05.

The following table exhibits these facts :—

	1895	1896	1897	1898	1899	1900
Deaths under 5 years.........	203	200	237	227	285	248
Births	936	938	957	1023	930	989
Percentage of Deaths under 5 years to Births	21·68	21·36	24·76	22·18	30·64	25·07
Population	32,948	34,147	35,346	36,545	37,744	39,198
Total Deaths	516	479	492	515	570	550
Death-rate calculated in usual manner	15·66	14·02	13·91	14·09	15·10	14·05

The remarks I made last year, on the great loss of life under 5 years which occurs in the town, still hold good although the state of affairs is not quite so bad as in 1899, and some improvement is shown.

It is still, however, our duty to look facts in the face, however ugly they may seem, and try to do something, however slight, to lessen their number.

I think the time has again arrived when the Insanitary Dwellings Sub-committee might again inspect certain portions of the town, such as Adelaide Street, Mason Street, St. Leonardgate, and the various courts which abound in the centre of the town.

To show that sanitary work has given good results in the past, I would refer you to my report for last year, where on page 12 is given the death-rate for the past 20 years, and which shows a steady diminution.

Death-rate for decenninal period 1880 to 1890	20·55
Do. for period from 1890 to 1900	15.96
Do. for 1900	14·05

Small-pox.

For the fourth year in succession I am enabled to report that no case of this dread disease has been notified in Lancaster. Last year I gave a list of the cases which had occurred since 1888. It is not, in my opinion, necessary to reproduce it.

The Small-pox Hospital has now been completed for some months, and is ready for occupation. It forms, next to effective vaccination, our greatest safeguard against an epidemic of small-pox. I am especially glad that it is ready, as small-pox is epidemic in several towns in the North, and, in these days of cheap railway fares, communication is much more easy than formerly.

Enteric Fever.

Again I am glad to be able to record a decrease in the notified case of this disease, although not to the same extent as last year. It will, however, be noticed that the chief improvement is in the mortality.

	1893	1894	1895	1896	1897	1898	1899	7 Years Average.	1900
January	2	3	6	4	7	5	6	4	3
February	1	2	5	11	...	11	4	4	2
March	3	3	1	14	8	9	1	5	4
April	3	1	1	9	2	5	2	3	5
May	3	8	...	6	4	11	4	5	2
June	2	3	1	7	1	3	3	3	1
July	1	3	4	4	...	8	3	3	1
August	4	6	3	2	5	7	1	4	2
September	7	3	1	1	11	7	12	6	10
October	3	7	2	5	10	5	9	6	5
November	8	2	3	...	3	7	5	4	5
December	2	6	1	1	4	9	...	3	1
Totals	39	47	28	64	55	87	50	50	41

Forty-one cases of this disease were notified in the whole district during 1900, and three fatal cases were recorded—the attack-rate was therefore 1·04 per 1,000 of population, and the case mortality 7·31 per centage of attacks, and the annual Enteric Fever death-rate ·07 per 1,000 of population.

In 1899 there were 50 cases of this disease notified, and of these 7 proved fatal. The attack rate was 1·23 per 1,000 of population, the case mortality 14·00 per centage of attacks, and the annual Enteric Fever death-rate ·17 per 1,000 of population.

37 cases occurred in the Borough as distinguished from the whole district; of these 19 were removed to the Sanatorium and treated there with 2 deaths, equal to a case mortality of 10·52 per centage of cases.

18 cases were treated at home with 1 death, equal to a case mortality of 5·55 per centage of cases.

In 1899 the cases treated at the Sanatorium were 23, with 2 deaths, equal to a case mortality of 8·69 per centage of cases. 24 cases were treated at home, with 5 deaths, equal to a case mortality of 20·83 per centage of cases.

The months in which these 3 deaths occurred are as follows :—

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
..	..	...	1	..	..	..	..	1	1	..	..	3

Wherever a case of Enteric Fever is notified, the drains and back yards are flushed out with a solution of Perchloride of Mercury as in former years.

The source of the milk supply is also noted in each case, but hitherto without leading to the discovery of any connection between the milk supply and the fever. The school connection is also inquired into, but no case has been traced to school attendance. The water supply cannot be held responsible as the same water is consumed by all inhabitants of Lancaster, and, furthermore, the water is pure and good.

As I said in my last report, I consider that the bacillus of Enteric Fever grows and multiplies in the damp earth around our dwellings, and, I think, good may be attained by systematically treating this with a disinfectant solution such as we use.

The way these bacilli gain an entrance to the system is probably by the wind blowing the dust containing them on to exposed food, and also into the air passages of human beings.

Scarlet Fever.

The increase of this disease, which in my last report I noted had taken place in the autumn of 1899, continued all through the year 1900, with the result that the cases notified were more numerous than in any year since 1893.

The following table gives the monthly incidence of this disease for the last eight years.

	1893	1894	1895	1896	1897	1898	1899	Average for 7 years.	1900
January	10	7	1	9	..	3	..	4	15
February	8	4	1	4	1	..	..	2	13
March	4	8	6	6	2	1	2	4	19
April	5	11	7	6	..	3	3	5	9
May	11	9	5	1	2	2	1	4	22
June	27	13	7	1	1	..	4	7	14
July	22	6	8	2	2	1	12	7	13
August	21	2	5	..	2	4	11	6	14
September	29	4	7	1	..	..	16	8	20
October	20	2	7	1	..	1	32	9	19
November	16	2	5	..	..	2	24	7	12
December	7	1	3	1	1	2	18	4	11
Totals	180	69	62	32	11	19	123	67	181

One hundred and eighty-one cases were notified in the whole town. Of these 178 occurred in the Borough proper, with a mortality ot two.

This small mortality stamps the disease as being of a mild type.

The two deaths registered as having occurred from scarlet fever are equal to an annual death-rate from that cause of ·05 per 1,000 of population, and a case mortality of 1·12 per centage of attacks.

In 1899, 123 cases were notified, with 4 deaths, equal to a death-rate of ·09 per 1,000 of population, and a case mortality of 3·25 per centage of attacks.

The following table shows the months in which the deaths occurred :—

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
—	—	—	—	—	—	—	1	—	—	—	1

Puerperal Fever.

One case only of this disease was notified in this district in the year 1900. This, however, proved fatal, as so many of these cases do. It is exceedingly difficult to trace the cause, as there are so many channels of infection.

More attention appears to be paid at present to auto-infection as a source of this complaint. If auto-infection is the cause of many of these attacks, much greater care must be paid to personal cleanliness than at present obtains in many cases.

Measles and Rotheln.

At the end of 1899 this Authority decided to abandon the notification of Measles and Rotheln, on account of the meagre results obtained thereby.

This year, therefore, I cannot give you the number of cases which have occurred in the town. I can simply give you the fatal cases.

These cases numbered 6, and the complications which rendered the cases fatal were, as usual, diseases of the respiratory organs.

These 6 deaths were equal to an annual death-rate from this cause of ·15 per 1,000 of population, and a case mortality of 8·57 per centage of attacks.

In the earlier portion of the year, before the consent of the Local Government Board to the removal of Measles and Rotheln from the list of notifiable diseases had been received, 70 cases were notified.

The disease has been prevalent all through the year, but abated considerably towards its close.

Diphtheria.

The number of cases of this disease which have occurred in the town this year amount to 118.

This number is far beyond the average, and virtually constituting an epidemic justifies my treating of the matter at greater length than I have ever done before. During the past thirteen years Lancaster has never, in any one year, been free from Diphtheria.

The number of attacks and the fatal results for these years is as follows :—

Year.	Attacks.	Deaths.
1888	3	0
1889	3	0
1890	1	0
1891	10	0
1892	20	4
1893	10	1
1894	7	3
1895	8	2
1896	7	3
1897	1	1
1898	6	0
1899	5	5
1900	118	37

The following is a list of the cases which have been notified as occurring in Lancaster during the year 1900. The sex, age, locality of outbreak, date of notification, and result of the attack are given.

No.	Sex.	Age.	Locality.	Date of Notification.	Result, with date of termination of case.
1	F	30	Ashton Road	January 7	Recovered Feb. 2
2	M	7	Workhouse	January 12	Died Jan. 12
3	F	5	Railway Street	February 7	Died Feb. 8
4	M	8	Back George Street	March 10	Recovered Apl. 12
5	M	10	Ulleswater Road	March 13	Recovered Apl. 29
6	M	3	Aldcliffe Street	March 15	Died March 16
7	F	55	Fenton Street	March 15	Recovered Apl. 7
8	F	5	Woodville Street	March 23	Recovered Apl. 12
9	F	4	Aldcliffe Street	March 24	Recovered Apl. 11
10	M	3	Queen Street	March 31	Died Apl. 3
11	F	4	Golgotha	March 31	Died March 31
12	M	6	Aldcliffe Street	April 2	Recovered Apl. 23
13	F	1½	Stirling Road	April 5	Died April 7
14	F	3	Britannia Street	April 5	Died April 21
15	M	$1\frac{2}{12}$	Queen Street	April 6	Died April 8
16	F	9	Beechfield Terrace	April 15	Recovered May 4
17	F	2	Grasmere Road	April 19	Died April 21
18	F	29	Park Road	April 21	Recovered May 12
19	M	2½	Park Road	April 21	Died April 24
20	F	1¼	Wood Street	April 29	Died April 30
21	F	2¼	Williamson Road	April 30	Died May 2
22	M	2½	Dalton Road	May 1	Died May 2
23	M	10 mon.	Williamson Road	May 3	Recovered June 9
24	F	5	Penny Street	May 14	Recovered June 15

No.	Sex.	Age.	Locality.	Date of Notification.	Result, wtth date of ttrmination of case.
25	F	3	Penny Street	May 15	Recovered June 15
26	M	4½	Robert Street	May 16	Recovered June 12
27	F	4	Edward Street	May 16	Died May 16
28	F	7	Penny Street	May 19	Recovered June 15
29	F	4	Alfred Street	May 21	Died May 24
30	M	27	Dumbarton Road	May 22	Recovered June 17
31	F	15	Robert Street	May 26	Recovered July 9
32	M	5¾	Moorgate	May 30	Died June 1
33	F	3	Henry Street	June 1	Died June 2
34	F	10	Little John Street	June 1	Recovered June 19
35	M	3	Henry Street	June 12	Died June 12
36	M	6	Henry Street	June 14	Died June 21
37	F	1	Lucy Street	July 16	Died July 16
38	M	2	Springfield Street	July 17	Recovered Aug. 14
39	M	38	Meadowside	July 16	Died July 16
40	F	3	Lucy Street	July 22	Died July 22
41	M	6	Lucy Street	July 22	Recovered Aug. 16
42	M	10	Edward Street	August 4	Died August 6
43	F	3	Lord Street	August 7	Recovered Aug. 30
44	F	4½	Garnet Street	August 29	Recovered Sept. 12
45	F	9	Queen Street	August 30	Recovered Oct. 3
46	M	25	Church Street	Sept. 3	Recovered Sept. 13
47	F	5	Norfolk Street	Sept. 3	Died September 4
48	F	8	Havelock Street	Sept. 6	Recovered Oct. 9

No.	Sex.	Age.	Locality.	Date of Notification.	Result, with date of termination of case.
49	F	4	Havelock Street	Sept. 6	Recovered Oct. 2
50	F	10	Percy Road	Sept. 13	Died Sept 22
51	M	8	Willow Lane	Sept. 14	Died Sept. 14
52	F	5	Havelock Street	Sept. 20	Recovered Oct. 13
53	F	6	Prospect Street	Sept. 24	Recovered Oct. 23
54	M	11	Prospect Street	Sept. 24	Recovered Oct. 23
55	F	6	De Vitre Street	Sept. 25	Died Oct. 4
56	F	4	Elgin Street	Sept. 26	Recovered Oct. 18
57	F	8	Wilson's Court	Sept. 26	Recovered Oct. 31
58	M	16	Prospect Street	Sept. 27	Recovered Oct. 23
59	F	10	Barracks	Sept. 26	Recovered Oct. 22
60	F	9	Hope Street	Sept. 28	Died Oct. 2
61	M	11	Winder's Court	Sept. 28	Recovered Oct. 23
62	M	12	Wood Street	Sept. 27	Recovered Oct. 22
63	F	7	Damside Street	Sept. 28	Recovered Nov. 4
64	F	8	Percy Road	October 2	Recovered Oct. 16
65	M	3	Salisbury Road	October 2	Died Oct. 10
66	F	2	Queen Street	October 4	Died Oct. 4
67	M	9	Havelock Street	October 4	Recovered Oct. 27
68	M	5	Havelock Street	October 4	Recovered Oct. 27
69	F	11	Sidney Terrace	October 6	Recovered Oct. 2
70	F	1	Albert Place	October 6	Died Oct. 8
71	M	10	Alfred Street	October 9	Recovered Oct. 31
72	F	5	Chancery Lane	October 12	Recovered Nov. 23

No.	Sex.	Age.	Locality.	Date of Notification.	Result, with date of termination of case.
73	F	4	Salisbury Road	October 12	Recovered Nov. 1
74	F	3	Briery Street	October 16	Recovered Oct. 30
75	F	9	Wolseley Street	October 18	Recovered Nov. 10
76	M	9	Market Square	October 21	Recovered Nov. 16
77	M	5	Ulleswater Road	October 20	Died Oct. 21
78	F	6	Tarbert Street	October 21	Died Oct. 24
79	M	2	Windmill Street	October 20	Recovered Nov. 7
80	F	5	Ulleswater Road	October 23	Recovered Nov. 5
81	F	3	Ulleswater Road	October 2	Recovered Nov. 5
82	M	5	Park Road	October 24	Recovered Nov. 30
83	F	2	Adelaide Street	October 26	Recovered Dec. 8
84	F	8	Queen Street	October 27	Recovered Nov. 13
85	F	8	Swan Court	October 25	Recovered Nov. 23
86	F	7	Bulk Street	October 29	Recovered Dec. 15
87	F	3	Pinfold Lane	October 30	Recovered Nov. 5
88	F	3	Blades Street	October 30	Recovered Nov. 12
89	F	6	Wolseley Street	October 30	Recovered Dec. 12
90	M	7	Prospect Street	Nov. 2	Recovered Dec. 7
91	F	6	Edward Street	Nov. 3	Died Nov. 16
92	F	7	Dunkeld Street	Nov. 7	Recovered Dec. 7
93	F	6	Alfred Street	Nov. 8	Died Nov. 16
94	M	2	George Street	Nov. 8	Recovered Dec. 20
95	M	3	St. Anne's Place	Nov. 14	Recovered Dec. 7
96	F	5	Alfred Street	Nov. 15	Recovered Nov. 30

No.	Sex.	Age.	Locality.	Date of Notification.	Result, with date of termination of case.
97	F	7	Edward Street	Nov. 15	Recovered Dec. 20
98	M	4	Park Road	Nov. 16	Died Nov. 17
99	F	23	County Asylum	Nov. 18	Recovered Dec. 31
100	F	8	Edward Street	Nov. 18	Recovered Dec. 17
101	F	4	Dunkeld Street	Nov. 19	Recovered Dec. 15
102	M	3	Ashbrook Street	Nov. 20	Recovered Dec. 14
103	F	5	Queen Street	Nov. 22	
104	M	5	Dale Street	Nov. 22	Recovered Dec. 20
105	F	37	Eastham Street	Nov. 26	Recovered Dec. 16
106	F	2	Wolseley Street	Nov. 17	Recovered Dec. 17
107	F	33	Wolseley Street	Nov. 17	Recovered Dec. 17
108	M	6	Willow Lane	Nov. 26	Recovered Dec. 28
109	F	3	Adelphi Street	Nov. 29	
110	F	6	Winder's Court	Nov. 29	Recovered Dec. 12
111	F	21	Hope Street	Dec. 4	Recovered Dec. 19
112	F	1	Bowerham	Dec. 9	Recovered Dec. 29
113	F	2	River Street	Dec. 15	Died Dec. 17
114	M	9	Regent Street	Dec. 16	
115	F	5	Bulk Street	Dec. 26	
116	M	6	Scotforth	Dec. 26	Died Dec. 26
117	F	8	Primrose Street	Dec. 28	
118	M	4	Rose Street	Dec. 31	

I propose to commence the consideration of these cases in groups, which I have arbitrarily formed according to the situation of the infected dwelling. The cases which cannot be grouped will be considered last.

The first group is composed of those cases which are situated in the Bowerham district, and which I have numbered 48, 49, 52, 67, 68, 109, and 112.

Number.	Sex.	Age.	Date of notification.	Date of termination of case.	Milk supply.	Number of members in family who escaped	School.	Number of cases in this school prior to this.
48	F	8	Sept. 6	Oct. 9	15	6	B	6
49	F	4	Sept. 6	Oct. 2	22	8	B	6
52	F	5	Sept. 20	Oct. 13	15	9	L	—
67	M	9	Oct. 4	Oct. 27	15	6	L	2
68	M	5	Oct. 4	Oct. 27	15	6	L	2
109	F	3	Nov. 29		24	3	L	4
112	F	1	Dec. 9	Dec. 29	10	2	—	—

Numbers 48, 49, 52, 67, and 68 all lived in the same street, and probably associated together in play. Numbers 67 and 68 were brothers.

The cases were notified somewhere about the same time.

The same milk supply and school were not common to all.

Case 109 occurred later, in the next street, and case 112 was that of an infant.

Group 2 consists of three cases living off the main road in that portion of the town known as "The Pointer."

Number.	Sex.	Age.	Date of Notification.	Date of termination of Case.	Milk Supply.	Number of members of family who escaped.	School.	Number of Cases in this School prior to this.
3	F	5	February 8	February 8	4	3	A	0
50	F	10	September 13	September 22	7	3	B	8
64	F	8	October 2	October 16	21	11	L	2

Case 3 occurred in the early days of the epidemic in a different street from that in which the other two resided. It has probably no connection with the other cases. Cases 50 and 64, occurred about the same time, and it is quite possible that some communication may have taken place between the houses. Case 50 had probably been ill at least a week before medical assistance was sought, and the child died nine days after notification. Case 64 occurred eleven days after the death of case 50.

Group 3 consists of eight cases, which are numbered 16, 51, 65, 73, 74, 79, 102, and 108. They resided in the district known as the Marsh, and with the exception of the first case, which occurred in the spring, may be said to have followed one upon another in the autumn when the epidemic was at its height.

Number.	Sex.	Age.	Date of Notification.	Date of Termination of Case.	Milk Supply	Number of Members in Family who Escaped.	School.	Number of Cases in this School prior to this.
16	F	9	April 15	May 4	?	5	H	0
51	M	8	Sept. 14	Sept 14	23	9	B	3
65	M	3	Oct. 2	Oct. 10	23	3	A	8
73	F	4	Oct. 12	Nov. 1	23	2	M	—
74	F	3	Oct. 16	Oct. 30	23	5	M	1
79	M	2	Oet. 20	Nov. 7	24	5	M	2
102	M	3	Nov. 20	Dec. 14	23	2	—	—
108	M	6	Nov. 26	Dec. 28	38	3	M	3

I have not been able to trace any connection between these cases. Five of the families obtained their milk, whilst two more may have occasionally had theirs from one source. In four cases attendance was made at the same school—in three cases at three separate schools—and in the remaining case no school was attended. The popular voice attributes all these cases to school attendance, but I am unable to discover that school attendance has had any influence in spreading the disease in these particular cases.

The fourth group consists of nineteen cases who resided in the neighbourhood of the Freehold.

Number.	Sex.	Age.	Date of Notification.	Date of Termination of Case.	Milk Supply.	Number of members of family who cscaped.	School.	Number of Cases in this school previous to this.
5	M	10	March 13	April 29	5	5	C	0
8	F	5	March 23	April 12	2	4	B	1
17	F	2	April 19	April 21	10	4	—	—
18	F	29	April 21	May 12	11	3	C	3
19	M	2	April 21	April 24	11	3	C	3
21	F	2	April 30	May 2	13	5	D	1
22	M	2	May 1	May 2	14	2	—	—
23	M	$\frac{10}{12}$	May 3	June 9	13	5	D	1
32	M	5	May 30	June 1	16	5	A	6
44	F	4	August 29	September 12	20	2	—	—
75	F	9	October 18	November 10	29	2	C	0
77	M	5	October 20	October 21	14	3	C	1
80	F	5	October 23	November 5	23	2	D	0
81	F	3	October 23	November 5	23	2	D	0
82	M	5	October 24	November 30	31	4	C	3
89	F	6	October 30	December 12	12	4	D	3
98	M	4	November 16	November 17	37	5	C	5
106	F	2	November 17	December 17	29	2	C	6
107	F	33	November 17	December 17	29	2	C	6

Case 5 was, I am informed, taken ill while on a visit in the Lancaster Rural District in a neighbourhood where other cases subsequently occurred. Two other children in the house escaped the disease, but prior to this attack, cases of sorethroat had occurred in the family. Case 8 did not live near case 5, and I could not trace any source of infection. Case 17 was also an isolated case. Cases 18 and 19 were mother and son. Cases 21 and 23 were brother and sister, and, I believe, there was an earlier case in the house which was not recognised. Case 22 did not appear to be connected with any of the other cases. Cases 32 and 44 appear to be independent cases, not connected with any other cases, or with each other. Cases 75, 106, and 107 were those of a mother and two daughters; the two latter appear to have been infected by the first, after the period of isolation which appeared necessary was past. The eldest child first became ill, she was isolated for a period of 23 days, and having been quite well for a fortnight, was again allowed to mix with the family. The house and bedding, &c., was disinfected, but 7 days after the first child had been permitted to come downstairs, the mother and other daughter were attacked by the disease. Cases 80 and 81 were sisters, and 89 lived in the same street as, and directly opposite to, cases 75, 106, and 107. Cases 82 and 98 were simply put in this group because they lived in the same neighbourhood, no connection could be traced between them or any other case. Milk was sold from the house in which case 89 occurred. The dairy was removed to another house, and no subsequent case was traced to this milk supply.

The 5th group consists of six cases. No. 13 was an infant. I have not been able to trace a connection with any other case. There were two other children in the house, but the disease did not spread. At least one other case however occurred in the same street which, although there was no membrane on the throat, was followed by paralysis, proving to me that the case was one of Diphtheria. Case 30 was that of an adult whose working day was long, and necessitated his presence for long long periods of time together in a house of doubtful sanitary condition. There were three children in the house in which he slept and in which he lived during his illness, but they escaped the disease.

Number.	Sex.	Age.	Date of notification.	Date of termination of case.	Milk supply.	Number of members in family who escaped.	School.	Number of cases in this school prior to this.
13	F	1	April 5	April 7	8	4	C	2
30	M	27	May 22	June 17	8	5	G	0
56	F	4	Sept. 26	Oct. 18	26	6	A	2
78	F	6	Oct. 21	Oct 24	30	3	C	2
92	F	7	Nov. 7	Dec. 15	40	4	C	4
101	F	28	Nov. 19	Dec. 15	40	4	C	8

Cases 92 and 101 were mother and daughter.

Cases 56 and 78 did not appear to be connected with each other or any other case.

Group 6 consists of eleven cases. Case 4, as far as I can gather, was one of a series occurring in the same street. The other cases were mild and did not receive medical attention, thus escaping notification. There were no other children in the house.

Number.	Sex.	Age.	Date of Notification.	Date of Termination of Case.	Milk Supply.	Number of Members in Family who escaped.	School.	Number of Cases in this School prior to this.
4	M	8	Mar. 10	Apl. 12	13	2	B	0
24	F	5	May 14	June 15	1	2	O	0
25	F	3	May 15	June 15	1	2	O	0
26	M	4	May 16	June 12	1	6	A	4
28	F	7	May 19	June 15	1	2	O	0
31	F	15	May 26	July 9	4	5	A	5
37	F	1	July 16	July 16	1	3	E	0
40	F	3	July 22	July 22	1	3	E	0
41	M	6	July 22	Aug. 16	1	3	E	0
57	F	8	Sept. 26	Oct. 31	18	3	A	2
94	M	2	Nov. 8	Dec. 20	7	7	A	13

Cases 24, 25, 26, 28, and 31 were probably connected. Nos. 24, 25, and 28 were the children of one family. No. 31 visited the house daily, and also visited the house of No. 26, where there were four other children, who escaped the disease. No. 31 had three sisters living in the same house as herself who all escaped the disease.

Cases 37, 40, and 41 were children of a family containing one other child who did not contract the disease. I have not been able to connect these cases with any others.

Cases 57 and 94 appeared to be quite unconnected with each other, or indeed any other case.

Group 7 consists of thirteen cases. Case 6 and case 12 were brothers. There may possibly be a connection with cases 9 and 14, but I have not been able to trace it. Cases 10 and 15 were brothers, and the disease was fatal in both instances. There were no other children in the house, which was newly built and in good sanitary condition.

Number.	Sex.	Age.	Date of Notification.	Date of termination of case.	Milk Supply.	Number of members in family who escaped.	School.	Number of cases in this School prior to this.
6	M	3	March 15	March 16	1	5	A	1
9	F	4	March 24	April 11	7	7	A	2
10	M	3	March 31	April 3	2	2	..	..
12	M	6	April 2	April 23	1	5	A	3
14	F	3	April 5	April 21	9	4	B	2
15	M	1	April 6	April 8	2	2	..	..
33	F	3	June 1	June 2	1	6	B	3
35	M	3	June 12	June 12	18	2	..	..
36	M	6	June 14	June 21	18	4	B	4
45	F	9	August 30	October 3	3	5	A	8
66	F	2	October 4	October 4	21	5	..	..
84	F	8	October 27	Nov. 13	21	10	A	11
103	F	5	Nov. 22	.. .. ..	3	8	H	1

Cases 33, 35, and 36 are in all probability connected. They lived in the same street, and most likely all played together. There were eight other children in the three houses, but they did not contract the complaint. Case 45 was the only one who took the disease in a family which contained three other children. The origin of the disease I could not discover. Cases 66, 84, and 103 all occurred in this neighbourhood, but I could not find any direct connection with any other case.

The eighth group consists of nine cases, which all occurred in modern property, built on new ground in contradistinction to that built on sites which have been inhabited for nearly a thousand years.

Number.	Sex.	Age.	Date of Notification.	Date of termination of case.	Milk Supply.	Number of members in family who escaped.	School.	Number of cases in this School prior to this.
53	F	6	Sept. 24	Oct. 23	5	4	A	0
54	M	11	Sept. 24	Oct. 23	5	4	A	0
58	M	16	Sept. 27	Oct. 23	5	4	A	5
60	F	9	Sept. 28	Oct. 2	27	4	A	6
90	M	7	Nov. 2	Dec. 7	4	6	A	12
104	M	5	Nov. 22	Dec. 20	24	8	L	4
105	F	37	Nov. 26	Dec. 16	24	2	L	5
111	F	21	Dec. 4	Dec. 19	2	7	L	7
117	F	8	Dec. 28	.. .. ..	37	6	C	9

Cases 53, 54, and 58 were brothers and sister—all made a good recovery. Case 60 had been ill more than a week before the doctor was sent for. The case had been domestically treated for quinsey by means of poultices. When the doctor arrived, the throat and nostrils were full of membrane and mucus, and although antitoxin serum was exhibited three times, at intervals of one day, the case terminated fatally. Notwithstanding the fact that the serum cleared away this membrane in great part, the toxins produced by the bacilli had already entered into the system, causing failure of the heart. This was a notable example of the danger of delay in summoning medical aid in cases of Diphtheria.

Cases 90, 104, 105, 111, and 117, appeared to have no connection with any other case or with each other. If there was any connection I could not discover it.

The ninth group contains eleven cases, occurring in a portion of the Borough which is much more sheltered than any other.

Number.	Sex.	Age.	Date of Notification.	Date of termination of Case.	Milk Supply.	Number of members in family who escaped.	School.	Number of cases in this School prior to this.
27	F	4	May 16	May 16	9	7	D	3
29	F	4	May 21	May 24	1	4	F	0
42	M	10	August 4	August 6	?	..	?	..
55	F	6	September 25	October 24	25	5	B	4
69	F	11	October 6	October 23	41	7	A	9
71	M	10	October 9	October 31	12	7	B	7
91	F	6	November 3	November 16	12	8	B	10
93	F	6	November 8	December 1	12	6	B	11
96	F	5	November 15	November 30	25	6	D	5
97	F	7	November 15	December 20	36	5	B	12
100	F	8	November 18	December 17	12	8	B	13

Case 27 was the only one who took the disease in a family of six children. No connection has been made out with any other case. Sore throats were common in this family. Case 29 also appears to be an isolated one. Two other children in the house escaped the disease. They were said to have frequently suffered from sore throats. Case 42 was that of a visitor from London who, after being in the town two days, was attacked by Diphtheria, and died after two days' illness.

With regard to the remainder of the cases in this group, with the exception of cases 71 and 93, who were brother and sister; and cases 91 and 100, who were sisters, all the cases appeared to be isolated ones, and I could not ascertain that there was any connection between them.

Five cases constitute the tenth group. Cases 61 and 110 both resided in a yard which has at times given the Authority some trouble, on account of the lack of space for providing water-closets and ashpits. The houses also have no through ventilation, and are far from desirable dwellings. Case 115 occurred in a shop in which, amongst other things, milk was sold. The sale was at once prohibited, and no extension of the disease by that means could be ascertained. Case 118 occurred in a small public-house, where it was isolated, and there were no further cases in connection therewith that could be ascertained.

Number.	Sex.	Age.	Date of Notification.	Date of termination of case.	Milk supply.	Number of members in family who escaped.	School.	Number of cases in this School prior to this,
61	M.	11	Sept. 28.	Oct. 23.	9	5	A	6
86	F.	7	Oct. 29.	Dec. 15.	33	5	B	9
110	F.	6	Nov. 29.	Dec. 12.	33	4	D	6
115	F.	5	Dec. 26.		33	6	B	14
118	M.	4	Dec. 31.		28	6	D	7

The eleventh group was also made up of five cases.

Number	Sex.	Age.	Date of Notification.	Date of termination of case.	Milk Supply	Number of members in family who escapod.	School.	Number of cases in this School prior to this
20	F	1	April 29	April 30	12	4	D	0
34	F	10	June 1	June 19	17	6	F	1
46	M	25	Sept. 3	Sept. 13	21	8	K	0
62	M	12	Sept. 27	Oct. 22	28	7	F	0
63	F	7	Sept. 28	Nov. 4	6	8	B	5

Case 20 was an isolated one, the origin of which could not be explained. There were four other children in the house, but they did not contract the disease. There were also four children who remained healthy in the house where case 34 occurred. I have not been able to trace any infection in this case also. Case 46 had shortly before his illness been engaged in repairing the drains of a large public institution. The sewerage system of this institution is quite separate from that of the rest of the Borough, except where it is discharged into it. No case of Diphtheria has occurred there for a very long period—so long that no record can be found of any such case. Cases 62 and 63 occurred in the same neighbourhood, but I have been unable to discover anything further about them.

I may add that the land on which these infected houses are built is low lying, and has at a distant period been formed by the material brought down by the river. Beneath is the old river bed. The land has been the site of dwellings for a long period, and every now and again ancient drains are discovered, which at one time carried the sewage from the houses to an old mill-race. This mill-race was found, some years ago, to be in such an insanitary state, that the Corporation went to a considerable expense in cleansing and concreting it, and cutting off all drains from it, and compelling the owners to connect them wlth the modern sewers. Since that time the condition of the mill-race has been quite unobjectionable.

The twelfth group consists of three cases only, which are the only ones notified from the suburb of Skerton. The land upon which the houses are built, although lying well above the river, is in wet weather sometimes incommoded with subsoil water, the drainage of this having presented considerable difficulty.

Number.	Sex.	Age.	Date of Nomination.	ate of Termination of Case.	Milk Supply.	Number of Members in Family who Escaped.	School.	Number of Cases in this School prior to this.
43	F	3	August 7	August 30	40	3	..	..
47	F	5	September 3	September 4	40	1	I	0
87	F	3	October 30	November 5	21	5	..	..

Case 43 was the first one occurring in the district. It appeared to me to be an isolated one. One other child living in the house escaped the disease, and there was no extension from this case. With regard to cases 47 and 87, which subsequently occurred, I can only say that I do not believe they had any connection with the first case. All three cases lived a considerable distance apart from each other.

I have gathered up all the remaining cases to form group thirteen. They appear to me to be quite isolated, both from each other and also from any of the previous groups.

Number.	Sex.	Age.	Date of Notification.	Date of Termination of Case.	Milk Supply.	Number of Members in Family who Escaped	School.	Number of Cases in this School prior to this.
1	F	30	January 7	February 2	1	?	..	..
2	M	7	January 12	January 12	15	?	B	0
7	F	55	March 15	April 7	6	1	..	..
11	F	4	March 31	March 31	8	2	C	1
38	M	2	July 17	August 14	19	9	A	7
39	M	38	July 16	July 16	5	3	P & Q	0
59	F	10	September 26	October 22	18	3	A	2
70	F	1	October 6	October 8	6	7	B	6
72	F	5	October 12	November 23	23	5	N	0
76	M	9	October 21	November 16	13	5	A	10
83	F	2	October 26	December 8	21	6	B	8
85	F	8	October 25	November 23	32	3	D	2
88	F	3	October 30	November 12	34	4	..	..
95	M	3	November 14	December 7	35	4	D	4
99	F	23	November 18	December 31	39	..	..	..
113	F	2	December 15	December 17	21	4	P	0
114	M	9	December 16	December 16	34	6	K	1
116	M	6	December 26	December 26	21	4	Q	0

Case 1 was perhaps connected with a fatal case which occurred in the neighbourhood in December of 1899. I feel quite certain, however, that this case did not cause any extension of the disease.

Case 2 occurred in the Workhouse where the child had resided some time. There was no extension of the disease amongst the other children there.

Cases 7, 11, 38, 39, 59, 72, 76, 83, 85, 88, 95, 114, and 116 were all cases in which I failed to trace the source of the complaint, neither could I trace any extension of the infection from them to other cases.

Case 70 might perhaps be connected with cases 24, 25, 26, 28, and 31, which are treated of in Group 6, but the last of these cases, namely, No. 31, was recovered on July 9th, and case 70 did not commence until October the 6th.

Case 99 was the only one which occurred in the County Lunatic Asylum.

Case 113 was one of laryngeal Diphtheria, and was an example of fatal delay in calling in medical aid, due I feel confident to non-recognition of the serious nature of the disease.

In considering the causes of the spread of an epidemic of Diphtheria great importance is attached to the prevalence of sore throat, as these sore throats are often found to be due to the presence of Diphtheria bacillus in one of its modified forms. The following table gives the results of an inquiry amongst the cases which have occurred in Lancaster

No. of Case.	Number of other children in household.	Have sore throats been prevaient amongst them ?	No. of Case.	Number of other children in household.	Have sore throats been prevalent amongst them ?
1	..	..	21	4	No.
2	..	..	22	..	No.
3	1	No.	23	4	No.
4	..	No.	24	2	No.
5	2	Yes.	25	2	No.
6	4	No.	26	4	No.
7	..	No.	27	5	Yes.
8	2	No.	28	2	No.
9	5	No.	29	2	Yes.
10	1	No.	30	3	No.
11	2	No.	31	3	No
12	4	No.	32	..	Yes.
13	2	No.	33	4	No.
14	2	No.	34	4	No.
15	1	No.	35	2	No.
16	3	No.	36	2	No.
17	2	No.	37	1	No.
18	2	No.	38	4	No.
19	2	No.	39	2	No.
20	4	No.	40	1	No.

No. of Case.	Number of other children in household.	Have sore throats been prevalent amongst them ?	No. of Case.	Number of other children in household.	Have sore throats been prevalent amongst them ?
41	1	No.	61	4	No.
42	..	No.	62	2	No.
43	1	No.	63	6	Yes.
44	..	No.	64	4	No.
45	3	No.	65	2	No.
46	3	No.	66	1	No.
47	..	No.	67	3	No.
48	4	No.	68	3	No.
49	3	No.	69	5	No.
50	1	No.	70	4	Yes.
51	8	No.	71	3	No.
52	8	No.	72	4	No.
53	5	No.	73	1	No.
54	5	No.	74	2	No.
55	2	Yes.	75	1	No.
56	5	No.	76	3	No.
57	2	No.	77	2	No.
58	5	No.	78	2	No.
59	2	Yes.	79	4	No.
60	3	No.	80	2	No.

No. of Case.	Number of other children in household.	Have sore throats been prevalent amongst them ?	No. of Case.	Number of other children in household.	Have sore throats been prevalent amongst them ?
81	2	No.	100	5	Yes.
82	2	No.	101	4	No.
83	4	No.	102	1	No.
84	5	Yes.	103	5	No.
85	1	No.	104	7	No.
86	4	No.	105	1	No.
87	1	No.	106	1	No.
88	2	No.	107	1	No.
89	3	No.	108	2	No.
90	..	No.	109	2	No.
91	5	Yes.	110	3	No.
92	4	No.	111	1	No.
93	3	No.	112	..	No.
94	3	No.	113	2	No.
95	3	Yes.	114	3	No.
96	3	No.	115	3	No.
97	3	Yes.	116	2	Yes.
98	4	No.	117	3	Yes.
99	..	..	118	4	No.

From this it will be seen that in only 15 instances out of 118 were sore throats considered by the parents to have been prevalent.

In this epidemic 100 families were affected by Diphtheria, and of these families sore throats were said to have been prevalent in 14 instances only.

The number of children in these houses was about 419, of whom 107 were attacked by the disease.

A consideration of the age and sex of the persons attacked by Diphtheria bears out the conclusions which are set forth in the chief medical treatises on the subject. It may be observed that the female sex is more liable to be attacked. Children, aged from two to eight years, are more liable to attack. "Age susceptibility is the main factor in the selection of the victims of Diphtheria."

The following table shows the ages and sex of the persons attacked by Diphtheria :—

Age.	Male.	Female.	Total.	Age.	Male.	Females.	Total.
Under 1	1	..	1	Brought forward.	44	68	112
1—2	1	5	6	29—30	..	1	1
2—3	5	6	11	30—31	..	1	1
3—4	6	10	16	31—32	..	..	..
4—5	3	8	11	32—33	..	..	..
5—6	5	10	15	33—34	..	1	1
5—7	5	7	12	34—35	..	..	..
7—8	2	5	7	35—36	..	..	..
8—9	2	7	9	36—37	..	..	..
9—10	3	4	7	37—38	..	1	1
10—11	4	2	6	38—39	1	..	1
11—12	2	1	3	39—40	..	..	..
12—13	1	..	1	40—41	..	..	..
13—14	..	..	..	41—42	..	..	..
14—15	..	..	..	42—43	..	..	..
15—16	1	..	1	43—44	..	..	..
16—17	1	..	1	44—45	..	..	..
17—18	..	..	..	45—46	..	..	..
18 –19	..	..	..	46—47	..	..	..
19—20	..	..	..	47– 48	..	..	..
20—21	..	..	..	48—49	..	..	..
21—22	..	1	1	49—50	..	..	..
22—23	..	..	..	50—51	..	..	..
23—24	..	1	1	51—52	..	..	..
24—25	..	..	..	52—53	..	..	..
25—26	1	..	1	53—54	..	..	..
26—27	..	..	..	54—55	..	..	..
27—28	1	..	1	55—56	..	1	1
28—29	..	1	1				
Carried forward.	44	68	112	Totals.	45	73	118

The deaths which have occurred number 37, of whom 16 were males and 21 females. It is usually stated that in the first year of life, boys are much more liable to die than girls—this increased liability diminishing year by year until the 3rd or 4th year, when the disease is more fatal among girls. In females the disease gradually increases in fatality up to the 5th or 6th year, when the liability to death gradually diminishes year by year. Of course it is difficult to draw conclusions of any value from a small number of figures, so I have not attempted to compare our results with the above quoted conclusions. There are two facts, however, which are quite apparent, the first is that females were much more liable to attack, and males to death in this epidemic.

The ages and sexes of the Fatal cases are as under :—

Age.	Male.	Female.	Total.	Age.	Male.	Female.	Total.
Under 1	..	..	..	Br't. forward	15	21	36
1—2	1	4	5	20—21	..	..	..
2—3	2	4	6	21—22	..	..	..
3—4	4	3	7	22—23	..	..	..
4—5	1	3	4	23—24	..	..	..
5—6	2	2	4	24—25	..	..	..
6—7	2	3	5	25—26	..	..	..
7—8	1	..	1	26—27	..	..	..
8—9	1	..	1	27—28	..	..	..
9—10	..	1	1	28—29	..	..	..
10—11	1	1	2	29—30	..	..	..
11—12	..	..	..	30—31	..	..	..
12—13	..	..	..	31—32	..	..	..
13—14	..	..	..	32—33	..	..	..
14—15	..	..	..	33—34	..	..	..
15—16	..	..	..	34—35	..	..	..
16—17	..	..	..	35—36	..	..	..
17—18	..	..	..	36—37	..	..	..
18—19	..	..	..	37—38	..	..	..
19—20	..	..	..	38—39	1	..	1
Carried forward	15	21	36	Totals	16	21	37

The number of cases of diphtheria notified in 1900 was 118. This gives an attack rate of 2·77 per 1,000 of population.

Forty-five of these cases were males and 73 females, showing the greater attack liability of the female sex.

Thirty-seven of these cases have proved fatal, and 75 have recovered, whilst 6 were still under treatment at the end of the year.

Of the 112 cases which have terminated, 37 died and 75 recovered.

Forty-three were males, of whom 16, or 37·20 per cent. died, and 69 were females, of whom 21, or 30·43 per cent., died.

The diphtheria death-rate is therefore ·86 per 1,000 of population, and the case mortality 33·03 per centage of attacks.

Diphtheria is a disease which has of late years shown a distinct increase. Formerly it was more common in rural districts, but now its chief habitat is in towns, and it has been noticed that it is more common in London than elsewhere. It has a marked tendency to recur at intervals—a characteristic which it possesses in common with certain other zymotic diseases.

The disease is dependent upon the presence and growth of an organism known as the Klebs-Loëffler bacillus. As far back as 1875 Klebs discovered this bacillus, but it was not until 1884, when Loëffler obtained pure cultures of it, that it was accepted as the cause of the disease.

The organism is of the class termed aerobic, *i.e.*, requiring a supply of air for growth and development.

Oërtel says that Diphtheria is one of the oldest epidemic diseases of the human race. Certainly it has been known from remote ages, but it was not until the year 1821, when Bretonnean published to the world the result of his researches, that any definite knowledge existed as to its nature and treatment.

The year 1875 was, however, the most important to medical practitioners of the present day, for in that year Klebs, after the exercise of almost superhuman patience and perseverance, discovered and described the Diphtheria bacillus, which is now universally allowed to be the cause of the disease.

This discovery was, however, not received with enthusiasm—the theory of the bacillary causation of disease being then in its infancy.

To show how little the discovery affected practising medical men, I may mention that 1875 was the year in which I myself qualified, and although I spent the year 1878 at my hospital (St. Bartholomew's), I do not remember to have heard of Kleb's epoch-making discovery before the year 1880.

Happily, in 1884 a great change occurred, for in that year Loëffler succeeded in obtaining pure cultures of the Klebs bacillus, which has since become well known as the Klebs-Loëffler bacillus, and has been proved to be the cause of the disease.

Time will not permit me to enumerate all the distinguished men who have laboured to elucidate the mysteries of this disease, I will therefore give only a few names. Peters proved the existence of a long and a short variety of the Klebs-Loëffler bacillus. He also discovered a so-called pseudo-diptheria bacillus. Roux and Yersin discovered the curious variations in the infectivity of the Klebs-Loëffler bacillus, also that toxin, when injected into the blood, was followed by paresis. In addition they also found the pseudo-diptheria bacillus. Démétriades cultivated the bacillus in water, and demonstrated its capacity for growth and reproduction both in sterilised and in impure water. To my mind, however, as a medical practitioner, the greatest discovery of all was that of Behring and Kitasato, when, in 1890, they demonstrated the antitoxic properties of the blood of animals rendered immune to Diphtheria, and their application of the discovery to the cure of the disease.

These gentlemen anticipated that by this means the death-rate of Diptheria would be reduced to 5 per cent. We have not yet quite attained to that success, but with greater experience of the treatment, there is no noubt we may confidently expect the death-rate of Diphtheria will diminish still more.

The history of the epidemic in Lancaster is as follows:—

For the last thirteen years Diphtheria has appeared in Lancaster almost every year.

In the year 1899 four cases were notified towards the close of the year, the last of which proved fatal.

Early in 1900 another case appeared in the same neighbourhood which might possibly be connected with the last case which occurred in 1899.

The disease ran a slow course, the cases being few and scattered, until the arrival of spring.

Following the usual course the cases then became more numerous, gradually diminishing during the summer months, until it seemed that the epidemic was over. During this time the Diphtheria bacilli were in all probability becoming dispersed throughout the town, and when autumn arrived the usual recrudescence took place.

The number of cases notified and deaths occurring in each month is shown below :—

	Notified Cases.	Deaths.
January	2	1
February	1	1
March	8	2
April	10	7
May	13	4
June	2	4
July	5	3
August	4	1
September	18	3
October	26	7
November	21	2
December	8	2
TOTALS	118	37

In considering the mass of information which has come into my possession concerning this epidemic of Diphtheria, certain matters have forced themselves upon my attention, and on them I wish to make some remarks.

(1) The attacks of the disease were widely scattered over the town.
(2) The apparently slight contagiousness of the disease.
(3) The part played in the spread of the disease by
    (*a*) The schools.
    (*b*) The milk supply.
    (*c*) The rainfall.
    (*d*) General insanitary conditions.
    (*e*) Delay in summoning medical aid.
(4) The effects of the serum treatment.

(1) The widespread nature of the attacks.

To my mind this is clearly shown by a consideration of the addresses in the list of Diphtheria cases, and the after-consideration of each case, all of which will be found on pages 22 to 44.

The disease has not in my opinion spread to any great extent by contagion. It has during this year been endemic in the British Isles, and in Lancaster the attacks have occurred all over the town, no particular locality being pre-eminently affected.

(2) The apparently slight contagiousness of the disease.

The households which have been attacked number 100, not including 1 County Asylum and 1 Workhouse, and contain a population of about 585 persons.

Of these persons 116, or 19·82 per cent., were attacked by the disease, whilst 469, or 80·17 per cent., escaped.

All these 118 cases have been isolated at home, no case being removed to the Sanatorium. The home isolation practised in such houses, as the majority of those which have been affected, is not, and never can be very perfect.

No nurse is, as a rule, engaged. The attendance is given generally by the mother of the patient, who at the same time, and usually in the same dress she wears in the sick room, goes about her various domestic duties and looks after the remainder of the family.

I think, therefore, that if the infectivity of the disease had been on this occasion such as we have been taught to expect, a far larger proportion of the persons in these houses would have become the victims of the disease.

The number of children alone in these households was about 419, so taking into account their special age-liability to Diphtheria, there was not lacking a sufficiency of material for a much larger epidemic than has *as yet* occurred.

Advisedly I say *as yet*, for the disease is especially liable to spread in the spring and autumn months, and next year it is quite possible the epidemic may attain much larger proportions.

Sore throats, it will be seen, are stated to have been prevalent in only 15 instances, out of 100—not so large a proportion as might have been expected.

(3*a*) **The part played by the Schools in the dissemination of the disease.**

I have prepared a list of those Schools in which cases of the disease appeared amongst the scholars. This list gives the number of persons connected with the School who were attacked by the disease, with their addresses, date of seizure and recovery, or death.

The incubation period of Diphtheria varies from 2 to 7 days, but is usually 2 to 4. For that reason I have given the dates of attack and recovery, in order that you may know approximately the date of the return to school.

This table, I think, bears out the conclusion arrived at by Professor Smith, Medical Officer to the London School Board, in his Harben Lectures this year, " that it is seldom necessary to close a school on account of Diphtheria," or, put in another way, Diphtheria is seldom spread by the attendance of children at school.

SCHOOL A.

No. of Case.	Address	Date of Notification.	Termination of Case.	
			Recovery.	Death.
3	Ashton Road	February 7		Feb. 8
6	Aldcliffe Street	March 15		March 16
9	Aldcliffe Street	March 24	April 11	
12	Aldcliffe Street	April 2	April 23	
26	Albert Place	May 16	June 12	
31	Albert Place	May 26	July 9	
32	Woodville Terrace ..	May 30		June 1
38	Springfield Street ..	July 17	August 14	
45	Queen Street	August 30	October 3	
52	Prospect Street	Sept. 24	October 23	
53	Prospect	Sept. 24	October 23	
56	Elgin Street	Sept. 26	October 18	
57	Wilson's Court ..	Sept. 26	October 31	
58	Prospect Street	Sept. 27	October 23	
59	Old Barracks	Sept. 26	October 22	
60	Hope Street	Sept. 28		October 2
61	Winder's Court	Sept. 28	October 3	
65	Salisbury Road	October 2		October 10
69	Sidney Terrace	October 6	October 23	
76	Market Square	October 21	Nov. 16	
84	Queen Street	October 27	Nov. 13	
90	Prospect Street	Nov. 2	Dec. 7	
94	George Street	Nov. 8	Dec. 20	

SCHOOL B.

No. of Case.	Address.	Date of Notification.	Termination of Case.	
			Recovery.	Death.
2	Workhouse	Jan. 12		Jan. 12
4	Back George Street ..	March 10	April 12	
8	Woodville Street ..	March 23	April 12	
14	Britannia Street	April 5		April 21
33	Henry Street	June 1		June 2
36	Jackson's Yard	June 14		June 21
48	Havelock Street	Sept. 6	Oct. 9	
49	Havelock Street	Sept. 6	Oct. 2	
50	Percy Road	Sept. 13		Sept. 22
51	Willow Lane	Sept. 14		Sept. 14
55	DeVitre Street	Sept. 25		Oct. 4
63	Damside Street	Sept. 28	Nov. 4	
70	Albert Place	Oct. 6		Oct. 8
71	Alfred Street	Oct. 9	Oct. 31	
83	Adelaide Street	Oct. 26	Dec. 8	
86	Bulk Street	Oct. 29	Dec. 15	
91	Edward Street	Nov. 3		Nov. 16
93	Alfred Street	Nov. 8		Nov. 16
97	Edward Street	Nov. 15	Dec. 20	
100	Edward Street	Nov. 18	Dec. 17	
115	Bulk Street	Dec. 26		

SCHOOL C.

No. of Case.	Address.	Date of Notification.	Termination of Case.	
			Recovery.	Death.
5	Ulleswater Road ..	March 13	April 29	
11	Golgotha	March 31		March 31
13	Stirling Road	April 5		April 7
18	Park Road	April 21	May 12	
19	Park Road	April 21		April 24
75	Wolseley Street	Oct. 18	Nov. 10	
77	Ulleswater Road	Oct. 20		Oct. 24
78	Tarbert Street	Oct. 21		Oct. 24
82	Park Road	Oct. 24	Nov. 30	
92	Dunkeld Street	Nov. 7	Dec. 7	
98	Park Road	Nov. 16		Nov. 17
101	Dunkeld Street	Nov. 19	Dec. 15	
106	Wolseley Street	Nov. 17	Dec. 17	
107	Wolseley Street	Nov. 17	Dec. 17	
117	Primrose Street	Dec. 28		

SCHOOL D.

No. of Case.	Address.	Date of Notification.	Termination of Case.	
			Recovery.	Death.
20	Wood Street	April 29		April 30
21	Williamson Road ..	April 30		May 2
23	Williamson Road ..	May 3	June 9	
27	Back Edward Street ..	May 16		May 16
80	Ulleswater Road	Oct. 23	Nov. 8	
81	Ulleswater Road	Oct. 23	Nov. 8	
85	Swan Court	Oct. 25	Nov. 23	
89	Wolseley Street	Oct. 30	Dec. 12	
95	Anne's Place	Nov. 14	Dec. 7	
96	Alfred Street	Nov. 15	Nov. 30	
110	Winder's Court	Nov. 29	Dec. 12	
118	Rose Street	Dec. 31		

SCHOOL E.

37	Lucy Street	July 16		July 16
40	Lucy Street	July 22		July 22
41	Lucy Street	July 22	August 16	

SCHOOL F.

29	Alfred Street	May 21		May 24
34	Little John Street ..	June 1	June 19	
62	Wood Street	Sept. 27	October 22	

SCHOOL G.

No. of Case.	Address.	Date of Notification.	Termination of Case.	
			Recovery.	Death.
30	Quarry Road	May 22	June 17	

SCHOOL H.

16	Milking Stile Lane	April 15	May 4	
103	Queen Street	Nov. 22		

SCHOOL I.

47	Norfolk Street	Sept. 3		Sept. 4

SCHOOL K.

46	Church Street	Sept. 3	Sept. 13	
114	Regent Street	Dec. 16		

SCHOOL L.

52	Havelock Street	Sept. 20	Oct. 13	
64	Percy Road	Oct. 2	Oct. 16	
67	Havelock Street	Oct. 4	Oct. 27	
68	Havelock Street	Oct. 4	Oct. 27	
104	Dale Street	Nov. 22	Dec. 20	
105	Eastham Street	Nov. 26	Dec. 16	
109	Adelphi Street	Nov. 29		
111	Hope Street	Dec. 4	Dec. 19	

SCHOOL M.

No. of Case.	Address.	Date of Notification.	Termination of Case.	
			Recovery.	Death.
73	Salisbury road	Oct. 12	Nov. 1	
74	Briery Street	Oct. 16	Oct. 30	
79	Windmill Street	Oct. 20	Nov. 7	
108	Willow Lane	Nov. 26	Dec. 28	

SCHOOL N.

72	Chancery Lane	Oct. 12	Nov. 23	

SCHOOL O.

24	Penny Street	May 14	June 15	
25	Penny Street	May 14	June 15	
28	Penny Street	May 15	June 15	

SCHOOL P.

39	Meadowside.	July 16		July 16

SCHOOL Q.

39	Meadowside.	July 16		July 16

NO SCHOOL.

No. of Case.	Address.	Date of Notification.	Termination of Case.	
			Recovery.	Death.
1	Springfield Hall ..	Jan. 7	Feb. 2	
7	Fenton Street	Mar. 15	April 7	
10	Queen Street	Mar. 31		April 7
15	Queen Street	April 6		April 8
17	Grasmere Road	April 19		April 21
22	Dalton Road ..	May 1		May 2
35	Lamb's Yard, Henry St.	June 12		June 12
42	Edward Street	Aug. 4		Aug. 6
43	Lord Street	Aug. 7	Aug. 30	
44	Garnett Street	Aug. 29	Sept. 12	
87	Pinfold Lane	Oct. 30	Nov. 5	
88	Blades Street	Oct. 30	Nov. 12	
99	County Asylum	Nov. 18	Dec. 31	
102	Ashbrook Street	Nov. 20	Dec. 14	
66	Queen Street	Oct. 4		Oct. 4
112	Beresford Terrace ..	Dec. 9	Dec. 29	

(3*b*) The Milk Supply.

Infected milk has so often been proved to be the cause of diphtheria epidemics, that one has naturally come to regard it with suspicion. In this instance, however, the milk supply may, I think, be held quite guiltless.

Indeed, the large number of milk dealers who have supplied milk to families, in which a case of diphtheria occurred, *prima facie* negative the suspicion that the milk was to blame.

The 118 cases of diphtheria received milk from about 48 different sources.

14	milk dealers	supplied	each	1	patient
8	,,	,,	,,	2	patients
7	,,	,,	,,	3	,,
4	,,	,,	,,	4	,,
2	,,	,,	,,	5	,,
1	,,	,,	,,	6	,,
2	,,	,,	,,	8	,,
1	,,	,,	,,	12	,,

The milk consumed by 6 more patients was obtained anywhere, and one patient used condensed milk only.

Here follows a list of the milk dealers, with the patients supplied by them.

MILK DEALER No. 1.

No. of Case.	Date of Notification.	Date of Termination.
1	January 7	February 2
6	March 15	March 16
12	April 2	April 23
24	May 14	June 15
25	May 15	June 15
26	May 16	June 12
28	May 19	June 15
29	May 21	May 24
33	June 1	June 2
37	July 16	July 16
40	July 22	July 22
41	July 22	August 16

MILK DEALER No. 2.

8	March 23	April 12
10	March 31	April 3
15	April 6	April 8
111	December 4	December 19

MILK DEALER No. 3.

45	August 30	October 3
103	November 22	

MILK DEALER No. 4.

3	February 7	February 8
31	May 26	July 9
90	November 2	December 7

MILK DEALER No. 5.

5	March 13	April 29
39	July 16	July 16
53	September 24	October 23
54	September 24	October 23
58	September 27	October 23

MILK DEALER No. 6.

7	March 15	April 7
63	September 28	November 4
70	October 6	October 8

MILK DEALER No. 7.

9	March 24	April 11
50	September 13	September 22
94	November 8	December 20

MILK DEALER No. 8.

11	March 31	March 31
13	April 5	April 7
30	May 22	June 17

MILK DEALER No. 9.

14	April 5	April 21
27	May 16	May 16
61	September 28	October 23

MILK DEALER No. 10.

17	April 19	April 21
112	December 9	December 29

MILK DEALER No. 11.

18	April 21	May 12
19	April 21	April 24

MILK DEALER No. 12.

20	April 29	April 30
71	October 9	October 31
89	October 30	December 12
91	November 3	November 16
93	November 8	December 1
100	November 18	December 17

MILK DEALER No. 13.

4	March 10	April 12
21	April 30	May 2
23	May 3	June 9
76	October 21	November 16

MILK DEALER No. 14.

22	May 1	May 2
77	October 20	October 21

MILK DEALER No. 15.

No. of case.	Date of notification.	Date of termination.
2	January 12	January 12
48	September 6	October 9
52	September 20	October 13
67	October 4	October 27
68	October 4	October 27

MILK DEALER No. 16.

32	May 30	June 1

MILK DEALER No. 17.

34	June 1	June 19

MILK DEALER No. 18.

35	June 12	June 12
36	June 14	June 21
57	September 26	October 31
59	September 26	October 22

MILK DEALER No. 19.

38	July 17	August 14

MILK DEALER No. 20.

44	August 29	September 12

MILK DEALER No. 21.

46	September 3	September 13
64	October 2	October 16
66	October 4	October 4
83	October 26	December 8
84	October 27	November 13
87	October 30	November 5
113	December 15	December 17
116	December 26	December 26

MILK DEALER No. 22.

49	September 6	October 2

MILK DEALER No. 23.

51	September 14	September 14
65	October 2	October 10
72	October 12	November 23
73	October 12	November 1
74	October 16	October 30
80	October 23	November 5
81	October 23	November 5
102	November 20	December 14

MILK DEALER No. 24.

79	October 20	November 7
104	November 22	December 20
105	November 26	December 16
109	November 29	

MILK DEALER No. 25.

55	September 25	October 4
96	November 15	November 30

MILK DEALER No. 26.

56	September 26	October 18

MILK DEALER No. 27.

60	September 28	October 2

MILK DEALER No. 28.

62	September 27	October 22
118	December 31	

MILK DEALER No. 29.

75	October 18	November 10
106	November 17	December 17
107	November 17	December 17

MILK DEALER No. 30.

78	October 21	October 24

MILK DEALER No. 31.

82	October 24	November 30

MILK DEALER No. 32.

85	October 25	November 23

MILK DEALER No. 33.

86	October 29	December 15
110	November 29	December 12
115	December 26	

MILK DEALER No. 34.

88	October 30	November 12
114	December 16	

MILK DEALER No. 35.

95	November 14	December 7

MILK DEALER No. 36.

97	November 15	December 20

MILK DEALER No. 37.

98	November 16	November 17
117	December 28	

MILK DEALER No. 38.

108	November 26	December 28

THE COUNTY ASYLUM 39.

Various Milk Dealers, but all milk sterilised.

99	November 18	December 31

MILK OBTAINED FROM ANYONE, 40.

16	April 15	May 4
42	August 4	August 6
43	August 7	August 30
47	September 3	September 4
92	November 7	December 15
107	November 17	December 17

CONDENSED MILK, 41.

69	October 6	October 23

In considering the relationship betweeen an outbreak of Diphtheria and milk supply, it is necessary to bear in mind the rule that when the milk supply is the means whereby the disease is spread the resulting epidemic is characterised by a sudden outbreak with many attacks in the families having this common milk supply.

In the present epidemic it will have been noticed from the list which I have just given that these conditions do not obtain.

In the family of the milk dealer, amongst whose customers twelve cases of Diphtheria occurred, there was a fatal case of this disease on February 6th. The case, I believe, lasted only a few days, as the date of notification and the date of the death were the same. The case occurred in the district of a neighbouring Authority, and was dealt with by its officers. Another case of Diphtheria occurred in the same family in the latter portion of the year, which ended in recovery. There were not, however, either at that time or later in the year any cases of Diphtheria amongst the customers of this milk dealer.

(3*c*) The Rainfall.

Dr. Newsholme, the eminent sanitarian and the author of "Vital Statistics," has suggested the connection between an increased rainfall and the increased prevalence of Diphtheria.

In the neighbourhood of Lancaster the Rainfall has this year been above the average, but the number of wet days, that is to say those on which a rainfall of ·01 inches occurred, has been much the same as usual.

The general opinion, however, as far as I have been able to gauge it, distinctly pronounces this to have been a wet year.

A slight increase in the rainfall in this part of the country, where the soil is for the most part a heavy marl, tends to produce a state of earth moisture and atmospheric humidity which all authorities agree in considering highly favourable to the growth and reproduction of the Diphtheria bacillus.

Table showing the rainfall during the past five years, and average of those years, together with the rainfall for the year 1900.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1895	2·34	·37	4·48	2·22	·93	2·71	6·62	4·31	1·14	5·30	3·20	4·03	37·65
1896	2·03	1·84	5·22	1·73	·46	3·27	4·81	2·90	5·09	4·09	1·88	5·43	38·75
1897	·85	2·75	5·20	2·61	1·90	3·76	1·40	5·24	4·31	2·18	5·40	5·45	41·05
1898	4.15	2.72	1·02	3·45	2·96	3·07	·43	6·32	1·84	4·22	4·44	4·22	38·84
1899	5·33	2·65	2·15	4·39	3·55	1·59	2·70	2·13	1·39	4·60	3·20	3.58	37·26
Av'ge 5 y'rs.	2.94	2·06	3 61	3·28	1·97	2·88	3·19	6·18	2·75	4·07	3·48	4·46	38·71
1900	4·50	4·51	·61	2·51	1·99	2·99	2·95	6·90	1·79	7·99	4·15	8·48	48·56

Table showing the number of Rainy Days in the past five years, with the average for those years, and the number of Rainy Days in 1900.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1895	20	5	24	12	9	10	19	21	12	18	19	20	189
1896	16	14	21	15	5	14	14	19	25	20	8	23	194
1897	9	17	23	15	15	18	11	23	18	12	14	22	197
1898	18	22	10	13	18	15	7	18	11	18	18	27	195
1899	21	13	15	21	16	11	15	11	20	18	14	12	187
Av'ge 5 y'rs.	16·8	14·2	18·6	15·2	12·6	13·6	13·2	18·4	17·2	17.2	14·6	20·8	192
1900	23	14	7	18	12	17	15	16	17	23	17	24	203

The rainfall being thus proved to have been considerably in excess of the averages for the past five years, it naturally follows that the subsoil water has been high.

Dr. Thursfield says there is the closest connection between dampness of subsoil and dwellings and diphtheria.

Mr. M. Adams, of Maidstone, kept records, and claims that these show a strict concordance between subsoil dampness and diphtheria on the one hand, and absence of diphtheria and subsoil dryness on the other.

It would be instructive to compare the range of movement of subsoil water, the rainfall, and the barometric pressure, with the incidence and mortality of diphtheria.

(3*d*) General Insanitary Conditions.

Upon notification of each case, the sanitary state of the house and its surroundings was carefully looked into. In every case the drains were tested, and daily disinfected with perchloride of mercury. Disinfectants were also supplied for washing purposes, and upon the termination of the case the house was disinfected with formic aldehyde.

In two instances only were the drains discovered to be at fault.

There was, however, the usual accumulation of street dust, &c., and some of the places were obviously not too clean.

Dust, which contains the bacilli of Diphtheria, is of course especially dangerous, and when blown about by the wind may gain access to the system of persons in the vicinity, either by the breath or by settling upon their food.

The infectivity of the Diphtheria bacillus in damp dust is retained for months. Some authorities say that under such conditions Diphtheria bacilli retain their activity for at least half a year.

The absence of personal cleanliness, which is too frequently met with, is a determining factor in the incidence and mortality of the disease, which should not be overlooked.

With regard to the use of disinfectants and germicides, we are sadly in the dark. What disinfectant is lethal to a given bacillus, we do not as yet know, but no doubt the result of further research will determine which is to be used in any given disease.

In the meantime the most powerful germicides we have at our command are made use of.

(3*e*) Delay in Summoning Medical Aid.

This has, I am sure, resulted in many deaths. One of my own cases was ill for more than a week before I was sent for. The case died after four injections of serum, poisoned by diptheritic toxin, which in all probability would not have been formed had the antitoxin serum been used at the outset of the illness.

(4) The Effects of the Serum Treatment.

In the earlier portion of this report on Diphtheria, I have mentioned the names of some of those workers who discovered the method of treating the disease by the injection of serum, and who by their labours have brought this method of treatment to its present efficient state.

The result so far has been, that the Diphtheria death-rate has been reduced from about 30 per cent. in the period immediately prior to the general recognition of the value of the treatment by antitoxin serum, to about 15 per cent at the present tim

The number of cases which have occurred in Lancaster is of course too small to give statistics of any great value.

At the same time, the difference in the results of the treatment with, as compared with the treatment without antitoxin, are so remarkable that they demand the careful consideration of every medical practitioner.

I do not, however, think that the full benefit of the treatment has been attained during the present epidemic. In my opinion the initial doses of serum which have been used have been too small to secure the best results. The general dosage has been one of 2,000 units—the amount most frequently used in this country—in only one case, so far as I can ascertain, has a larger dose been used. This was one of 4,000 units, and only one more injection was required in the case, which recovered. Then, again, the dose of 2,000 units appears to me to be given by a sort of rule of thumb to all cases, without any regard to the size and weight of the patient or the severity of the disease. What I think we require to learn, is to adopt the dose to the necessities of the case more carefully than we do at present.

I now give you in tabular form the serum statistics of the Lancaster epidemic.

COMPLETED DIPHTHERIA CASES.

Total number of completed Diphtheria cases	112
Total recoveries	75
Total deaths	37
Percentage of deaths to cases	33·03
Percentage of deaths to total population...	·08
Examined bacteriologically	19
Not so examined	93
Treated with Antitoxin Serum	65
Recoveries after this treatment	47
Deaths after this treatment	18
Antitoxin treatment not used	47
Recoveries in such cases	28
Deaths in such cases	19
Percentage of Serum cases died	27·69
Percentage of non-serum cases died	40·42

Number of cases that received one injection only	22
Of these there recovered	16
The number of deaths was	6
Number of cases that received two injections	24
Of these there recovered	17
The number of deaths was	7
Number of cases that received three injections	11
Of these there recovered	8
The number of deaths was	3
Number of cases that received four injections	6
Of these there recovered	5
The number of deaths was	1
Number of cases that received five injections	2
Of these there recovered	1
The number of deaths was	1

I would here draw your attention to the fact that in a few cases the medical attendant was called in when the patient was moribund; some of these cases were treated with serum and some not—the result being the same in all cases and not affected by the treatment or the absence of it.

I am of opinion that if serum is used it diminishes the mortality and greatly shortens the duration of the disease. My experience, however, leads me to think that in the case of patients so treated it is not always easy in the absence of a bacteriological examination to determine when the patient may be pronounced free from infection. This can be settled by such an examination, and I invite the co-operation of my fellow practitioners to avail themselves to the full of the facilities which the Authority have placed at their disposal for the purpose. No serious results are likely to occur from the injection of antitoxin, provided the operation is carried out in a reasonably cleanly manner.

Five cases of a copious eruption of Urticaria have come under my notice. The eruption was chiefly found on the legs, and was of the usual character. This dermatitis is the form of complication most usually met with after the injection of antitoxin. It is said to be due to the albuminous constituents of the serum, it having been known to follow the injection of normal horse serum. It usually occurs, as in the cases under notice, about seven days after the injection.

The opinion of the medical profession taken as a whole is overwhelmingly in favour of antitoxin. Indeed I may go so far as to say in the language of a recent professional pamphlet on the subject:—"The medical man who does not use antitoxin in a case of diphtheria is guilty of culpable negligence."

I am of opinion that in every case of Diphtheria, however severe, or however slight, on the first appearance of the membrane, without waiting for the result of a bacteriological examination, which in this town, as you well know, is free to every practitioner, and before the metabolic products of the life of the Diphtheria bacillus have taken any appreciable hold upon the system, resort should be had to the injection of antitoxin.

I deprecate the idea that the serum treatment is useless in severe cases of long standing, or that the serum is not called for in cases of a mild degree of severity. But I do consider that in severe cases of long standing the initial dose should be high.

The medical practitioner has thus to his hand a powerful antidote to the further developement of the toxin, and so is able is protect the patient against the ever present danger of acute cardiac dilatation and consequent paralysis.

So much have I been impressed by the results of the serum treatment of Diphtheria that I would advocate the provision by this Authority of a supply of serum, free of charge, for the treatment of persons too poor to pay for it. Certain necessary safeguards would have to be provided to prevent abuse, but this I think would not be difficult of accomplishment.

In drawing these remarks to a conclusion I desire to put before you my explanation of the cause of the present epidemic.

As I stated in my remarks upon the rainfall, the weather during the year 1900 has been more than usually damp, and consequently the subsoil water has been high, and the air humidity great. The Klebs-Loëffler bacillus, upon which the disease which we have designated Diphtheria is dependent, having been proved capable of living for a long period in unsterillised water, it follows that dampness of the atmosphere is highly favourable to the growth and reproduction of the microbe. Such weather is also conducive to the spread of colds and catarrhal conditions generally;

thus rendering the throat and air passages favourable sites for the reception of infection. It is a matter within my own observation, that colds and sore throats were more than usually frequent last Spring. I would however call attention to the fact that this opinion is not supported by the result of enquiries made amongst the families of those attacked by Diphtheria.

I would also draw attention to the fact that Diphtheria has been prevalent all over the British Isles in 1900—much more so than is usual.

Futhermore the Klebs-Loëffler bacillus is not always possessed of the same deadly character.

Whilst certain cultivations cf this growth are possessed of a high degree of infectivity, sufficient to cause death in a short period, other cultivations of the same organism only possess this deadly characteristic in a very mild degree, quite insufficient to even produce the disease in a recognisable form.

It has, however, been found that a phenomenon called progressive infectivity may take place in these comparatively harmless bacilli, that is to say their virulence increases gradually with each successive generation, until the highest degree of virulence has been attained.

Consequently that which in one person may seem to be only a severe sore throat, may by contagion cause the death of another individual. It is, I think, perfectly justifiable to consider that the converse, of this may also occur, and that the death dealing characteristics of the Klebs-Loëffler bacillus may become so attenuated as scarcely to cause any disease whatever, or the virulence may be entirely lost, or remain in abeyance. or even that that particular cultivation of the bacillus may itself perish.

In addition to the foregoing remarks concerning the influences which favour the growth of the bacilli, their life history and the microbic character of the disease, there are in all probability other influences at work—probably atmospheric—which tend to the diffusion of the infection.

During the epidemic of Diphtheria in Lancaster, I have heard rumours that all my fellow practitioners do not regard the serum treatment with favour. If such an one there be, let me commend to his notice the medical literature on the subject, which is very extensive and exhaustive. I feel sure that if such papers are perused with an open and unbiased mind, conviction will follow as surely as day follows night.

I am glad, however, to be able to give you facts which prove that the serum treatment is gaining ground. Of the first 45 cases 22, or 48 per cent., were treated with antitoxin, whilst of the last 73 there were 49, or 67 per cent., so treated. This shows to my mind that the profession in Lancaster is now placing more reliance upon this method of treatment than it did during the earlier periods of the epidemic.

Diarrhœa.

Early in the spring of 1900, the experiment not having proved so entirely satisfactory as expected, the consent of the Local Government Board was obtained to the removal of Diarrhœa from the list of diseases compulsorily notifiable in Lancaster.

As things have turned out it is perhaps to be regretted that this course was taken, but events cannot always be forseen. In the first place there has been a most remarkable diminution this year in the deaths caused by Diarrhœa. In the next place the Local Government Board has altered the classification of the various diseases formerly placed under the heading of "Diarrhœa," elucidating the meaning of the term and explaining which cases are to be classed as Diarrhœa and which Enteritis.

The notification of Diarrhœa which, by the way as I have often stated in previous reports, only assumes an epidemic character in those months of summer when the temperature of the earth, as indicated by the four-foot thermometer, reaches 56°, indicates to the authority the situation of the cases, and enables disinfection of the back yards, &c. of the infected dwellings to be carried out. Owing to the absence of notification, this sanitary measure has not been practised in 1900.

As it is often asserted that an increased rainfall in the months when Diarrhœa becomes epidemic causes a diminution in the number of cases of this disease by washing the polluted surfaces of the streets, &c., and preventing the formation of dust. I have placed in tabular form the rainfall and the deaths from Diarrhœa for the last six years, in those months in which Diarrhœa usually becomes epidemic.

		1895	1896	1897	1898	1899	1900
July	Rainfall	6 62	4 81	1·40	·43	2·70	2·95
	Diarrhœa Deaths ..	1	7	1	2	6	2
August	Rainfall	4·31	2·90	5·24	6·32	2·13	6 09
	Diarrhœa Deaths ..	11	..	12	13	35	6
September ..	Rainfall	1·14	5 09	4 31	1·84	1·39	1·79
	Diarrhœa Deaths ..	7	..	15	18	28	9
October	Rainfall	5·30	4 09	2·18	4·22	4·60	7·99
	Diarrhœa Deaths ..	8	..	3	4	4	5

From the above table it may, I think, be learnt that some further cause than nature's sanitary procedure of washing the surface of the streets and backyards has been at work, and although there has not been such an extended trial of the experiment as to substantiate a claim that the disinfecting of the backyards and drains has reduced the Diarrhœa death-rate, it is sufficiently suggestive to deserve further consideration.

As these diarrhœa deaths occur chiefly among infants, the question of diet enters largely into any consideration of the cause.

Many of these infants are, from various causes, brought up on an artificial diet, which is generally cow's milk more or less roughly humanised or approximated to the standard of human milk,

I am greatly in favour of supplying sterilised humanised milk at a cheap rate to these infants by the Municipality. With this in view, I have, in my last two or three reports, drawn attention to the splendid results achieved by Dr. Dufour, of Fécamp, Normandy, where by these means the infantile death-rate has been reduced 50 per cent.

The Municipality of St. Helens is, I understand, giving this plan a trial. Might I suggest that a study of their methods might be of benefit to our own town, not only in the case of Diarrhœa, but also as a means of checking the spread of Consumption.

I have prepared the following table showing the Diarrhœa deaths in each of the months in the years 1897, 1898, and 1899, with a three years average, and in the year 1900:—

	1897.	1898.	1899.	3 Years' Average.	1900.
January	..	..	..	..	..
February	..	..	..	..	..
March	..	..	..	..	1
April	..	..	..	..	1
May	..	..	..	..	1
June	1	..	..	..	1
July	1	2	6	3	2
August	12	13	35	20	6
September	15	18	28	20	9
October	3	4	4	3	5
November	..	..	..	..	..
December	..	..	..	..	1
Totals	32	37	73	46	27

During the year 1900 the deaths of 27 persons were registered as due to Diarrhœa. This is equal to an annual death-rate of ·68 per 1,000 of population. In 1899 there were 73 such deaths, equal to an annual Diarrhœa death-rate of 1·79 per 1,000 of population.

Phthisis and other Tubercular Diseases.

These causes were reponsible for 80 deaths in the Urban Sanitary District of Lancaster during the year 1900, equal to an annual death-rate from this cause of 1·87 per 1,000 of population. In 1899 there were 119 such deaths in the same district, equal to an annual death-rate from this cause of 2·93 per 1,000 of population. In the Borough, less the six principal Institutions, there were, in 1900, 47 such deaths, equal to an annual death-rate from this cause of 1·19 per 1,000 of population. In the year 1899 in the Borough alone there were seventy-five such deaths registered, equal to an annual death-rate from this cause of 1·98 per 1,000 of population.

Phthisis alone was the cause of 64 deaths in the year 1900, equal to an annual death-rate from this cause of 1·50 per 1,000 of population. In 1899 there were 74 such deaths, equal to an annual death-rate of 1·82 per 1,000 of population.

In the Borough, less the six Institutions, there were 34 deaths from Phthisis, equal to an annual death-rate from this cause of ·89 per 1,000 of population. In the year 1899 there were in the same district 37 deaths, equal to an annual death-rate from this cause of ·98 per 1,000 of population.

In my last report I showed our position with regard to this disease, in view of the fact that one death in every eight in the United Kingdom is caused by Phthisis and other forms of Tuberculosis, and that one-half the deaths between 25 and 35 years of age are caused by these diseases.

The following table gives these results for last year and this :—

	1899	1900
One-eighth of total deaths in Lancaster, equal	100	97
Total deaths from Phthisis and other tubercular diseases, equal	119	80
Total deaths between 25 and 35 years of age, equal.. ..	58	66
Actual number of deaths at same age period from Phthisis and other tubercular diseases	31	25

It is thus apparent that, judged from this standpoint, the mortality from Phthisis and other tubercular diseases is well below the standard.

Furthermore, I would point out that these statistics are for the whole town, including the Institutions. These Institutions can very properly be excluded in considering the health of the Borough, for the inmates are mostly brought sick into the district for treatment in these Institutions. Take the case of the County Asylum alone, where this year 30 deaths occurred from Phthisis and other tubercular diseases, out of a total of 80 such deaths in the whole district.

The following table shows the statistics of Phthisis in Lancaster for the past seven years:—

	1894	1895	1896	1897	1898	1899	1900
Total deaths from Phthisis ..	54	79	59	66	63	74	64
Death-rate per 1,000 of population	1·55	2·20	1·59	1·72	1·59	1·82	1·50
Deaths from Phthisis in Borough	32	43	32	34	36	37	34
Deaths from Phthisis in Borough per 1,000 of population ..	1·00	1·30	·93	·96	·98	·98	·89
Deaths from Phthisis in the County Asylum	19	31	22	29	17	31	28
Deaths from Phthisis in the Royal Infirmary	2	1	2	1	6	2	1
Deaths from Phthisis in the Workhouse	1	4	2	2	4	4	1
Deaths from Phthisis in the Castle	..	..	1	..	..	..	..
Deaths from Phthisis in Ripley Hospital	..	..	...	..	..	..	..
Deaths from Phthisis in Bowerham Barracks	..	..	..	..	..	..	..

It will thus be seen that with regard to this disease there has been a considerable improvement, but to what cause I should ascribe it I really do not know. In my Reports for the years 1898 and 1899 I dwelt at considerable length upon the steps necessary to be taken to secure an improvement in the treatment of this disease. I do not think much can be gained by reprinting these precautions, which are simply those formulated by the Society for the Prevention of Tuberculosis, of which this Sanitary Authority is a member.

Phthisis is a disease which is receiving very much attention at the present day, and there is a great hope that, as it is becoming better understood, something may be done to lessen its ravages. As I have stated before, one death in every eight in the United Kingdom is attributed to it. It is due to a bacillus, the growth of which is fostered and promoted by absence of light and ventilation. One of the reasons why I am so greatly in favour of a system of Electric Tramways for Lancaster, is that it will stimulate building operations in the suburbs, where the houses will be built under modern bye-laws, and with a due regard to light, ventilation, and air space. Nothing is more favourable to the spread of such diseases than an insufficient supply of fresh air.

Notification of the disease would also be an advantage, as it would enable the Authority to take special sanitary precautions, and would show which parts of the town were most frequently the seat of the disease.

Much good might also be done by the circulation of such pamphlets as are prepared by the National Society for the Prevention of Tuberculosis, and at least an attempt might be made to educate the people as to the nature of the malady, and the best means of not only curing it, but preventing its spread. Being one of the Trustees of a small fund for benefitting persons in the initial stages of the disease, I must say that I find the greatest difficulty in carrying out the provisions of the trust. The disease is one the victims of which are always optimistic, and consequently neglect the first stage of the disease, which is the only time when a cure can be effected.

The powers, which the Authority have obtained in their last Act of Parliament for controlling the milk supply of the Borough will shortly be put in force. There are, I think, a considerable number of cattle in the district which are affected with tuberculosis, and the Authority have now the power of preventing the sale of milk in the Borough from such cattle.

Respiratory Diseases.

These include Bronchitis, Pneumonia, Pleurisy, and other diseases of the Respiratory organs.

In the year 1900 one hundred and fifty deaths from these causes were registered as having occurred in the whole district. This is equul to an annual respiratory death-rate of 3·52 per 1,000 of population.

In the year 1899 there were 116 such deaths, equal to an annual respiratory death-rate ot 2·85 per 1,000 of population.

In the Borough, less the 6 Institutions, there occurred in 1900 116 such deaths, equal to an annual corrected respiratory death-rate of 2·95 per 1,000 of population. In 1899 in the Borough, less the 6 Institutions, there were 88 such deaths, equal to a corrected respiratory death-rate for that year of 2·33 per 1,000 of population.

Thirty-four such deaths occurred in the various Institutions of the Town.

The increase in the number of these deaths which is considerable, amounting to no less than 34, is, I think, fully accounted for by the increased rainfall which we have had. Damp weather always causes an increase in such illnesses.

Influenza.

Seventeen deaths have in 1900 been attributed to Influenza, equal to an annual death-rate from this cause of ·39 per 1,000 of population. Ten of these deaths occurred in the town, equal to an annual death-rate of ·25 per 1,000 of population.

In 1899 two deaths only were registered from this cause, equal to an annual Influenzal death-rate of ·04 per 1,000 of population. Both these deaths occurred in the Borough. Of the 17 deaths from this cause in 1900, seven occurred in the County Lunatic Asylum.

The cause of this increase of Influenza deaths is, I think, to be attributed to the damper weather experienced in 1900.

Accidents.

Nineteen accidental deaths occurred in Lancaster during 1900, equal to a death-rate from this cause of ·44 per 1,000 of population.

In 1899 there were 22 such deaths, equal to a death-rate from this cause of ·54 per 1,000 of population.

Uncertified Deaths.

Seventeen deaths occurred in Lancaster in 1900 for whom no death certificate was given. Again I call attention to the large proportion of infantile deaths in this list. Out of the total of 17 deaths, 8 were those of infants under one year old and 3 more were less than five years of age. These 17 deaths are equal to an annual death-rate from this cause of ·39 per 1,000 of population, and the proportion borne to total deaths is 2·17 per cent.

In 1899 the number of such deaths was 19, equal to an annual death-rate from this cause of ·50 per 1,000 of population, and the proportion to total deaths was 2·35 per cent. The following is a list of the cases:—

M.	21 years	Probably	Influenza and Laryngitis.
M.	70 ,,	,,	Heart Failure.
M.	14 months	,,	a Fit.
M.	66 years	,,	Pernicious Anæmia and Syncope.
F.	1 minute	,,	Asphyxia.
F.	67 years	,,	Senile Decay.
M.	56 ,,	,,	Heart Disease.
M.	12 months	,,	Bronchitis, Teething, Fit.
F.	1 month	,,	a Fit.
F.	34 years	,,	a Fit.
M.	1 month	,,	Convulsions.
F.	2 ,,	,,	a Fit.
F.	19 ,,	,,	Diphtheria.
F.	1 ,,	,,	Convulsions.
M.	10 ,,	,,	Convulsions.
F.	4 ,,	,,	Convulsions.
F.	5 ,,	,,	Convulsions.

Inquests.

An enquiry into the cause of death was necessary in 25 instances. The annual death-rate of these cases is equal to ·58 per 1,000 of population, and the proportion borne to total deaths is 3·20 per cent.

In 1899 there were 30 inquests, equal to an annual death-rate of ·71 per 1,000 of population, and the proportion borne to total deaths was 3·72 per cent.

The following is a list of these inquests :—

M.	19 years	Shot himself with revolver.
M.	79 ,,	Sudden—natural causes.
M.	30 ,,	Sudden—natural causes.
F.	9 ,,	Shock to system through burns.
M.	31 ,,	Found drowned.
M.	4¾ ,,	Sudden—natural causes.
M.	43 ,,	Injuries through falling from window.
F.	9 ,,	Died through burns—Night-dress on fire.
M.	54 ,,	Injuries through being run over by wagon.
M.	39 ,,	Sudden, from Syncope—failure of heart.
M.	38 ,,	Injuries—thrown from a carriage.
M.	16 months	Shock to system from scalds.
M.	50 years	Found dead—run over by train.
M.	5½ ,,	Killed by falling from a cart.
M.	74 ,,	Injuries from falling off some timber.
M.	46 ,,	Accidental compound fracture of leg.
M.	4 ,,	Accidentally drowned in Canal.
M.	75 ,,	Sudden—natural causes.
M.	59 ,,	Dislocation of knee through falling down stairs.
M.	16 ,,	Died from swallowing probably a bone.
F.	11 months	Scalded by kettle being pulled from fire.
M.	41 years	Pneumonia—accelerated by being jammed between horse and cart and a wall.
F.	42 ,,	Found dead in bed.
F.	63 ,,	Fractured skull through falling down stairs.
M.	52 ,,	Heart disease.

Births.

During 1900 nine hundred and eighty-nine births were recorded in Lancaster, equal to an annual birth-rate of 25·23 per 1,000 of population. In 1899 the number registered was 930, equal to an annual birth-rate of 24·63. It will thus be seen that there has been in 1900 a slight increase of the birth-rate, which as the following table shows has been steadily declining for a good many years. The table also shows the births of males and females.

The Births for the last fourteen years are shown below:—

Year.	No. of Births.	Males.	Females.	Rate per 1,000.
1887	708	377	331	29·40
1888	757	385	372	28·90
1889	988	508	480	33·07
1890	923	486	437	30·30
1891	977	490	487	31·48
1892	947	511	436	29·21
1893	991	491	500	29·56
1894	1008	526	482	29·10
1895	936	469	467	26·12
1896	938	466	472	25·33
1897	957	480	477	25·03
1898	1023	523	500	25·94
1899	930	486	444	24·63
1900	989	495	494	25-23

The time of year when the Births occurred is shown here :—

	Males.	Females.	Total.
January.	45	36	81
February.	35	35	70
March.	39	47	86
April.	40	45	85
May.	50	49	99
June.	33	54	87
July.	45	37	82
August.	47	47	94
September.	40	33	73
October.	40	39	79
November.	48	37	85
December.	33	35	68

The Notification of Infectious Diseases.

On January 1st, 1900, the Infectious Diseases Notification Act came into force throughout England. Previously the same result had for thirty years been obtained in Lancaster by a clause inserted in a local Act passed in the year 1880.

Three diseases which were compulsorily notifiable last year have been removed from the list. Consequently Measles and Rotheln were only notifiable for a small portion of the year, and Diarrhœa not at all. On the other hand Erysipelas is now, for the first time, compulsorily notifiable. The following are the figures for the year 1900 :—

Scarlet Fever	181
Diphtheria	118
Measles	71
Enteric Fever	41
Erysipelas	15
Total	426

equal to an attack rate of 10·02 per 1,000 of population.

During the year 1899 the cases were as follows:—

Scarlet Fever	123
Diphtheria	4
Measles	780
Rotheln	1
Diarrhœa	329
Enteric Fever	50
Puerperal Fever	2
	1289

equal to an annual death-rate of 31·72 per 1,000 of population.

Of the 426 cases notified in 1900, 413 occurred in the Borough, and 13 in the various Institutions. In 1899, 1255 cases occurred in the Borough, and 34 in the various Institutions.

Table showing the Monthly Notifications of all Zymotic Diseases for the year 1900:—

1900.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Diarrhœa.	Whooping Cough.	Small-pox.
January	15	3	3	56	..	..	..
February	13	1	2	8	..	..	..
March	19	8	4	7	..	..	..
April	9	9	5	..	..	..	..
May	22	12	2	..	..	..	..
June	14	4	1	..	..	..	..
July..	13	5	1	..	..	..	..
August	14	4	2	..	..	..	..
September	20	18	10	..	..	..	..
October	19	25	5	..	..	..	..
November	12	22	5	..	..	..	..
December	11	8	1	..	..	..	..

Bacteriological Examination.

This method of verifying a doubtful diagnosis has been more fully utilised in this than in previous years.

In 1900 thirty-four bacteriological examinations have been made for the medical practitioners of the town at the expense of the Sanitary Authority. Twenty-eight of these were Diphtheria cases and six enteric fever.

Of the 26 Diphtheria cases, the characteristic bacillus was found in 19 cases, which were duly notified, whilst 7 other cases in which the Report (given with each case) said that the bacillus had not been found 5 were on that account not notified.

Of the 6 cases of Enteric Fever submitted to this examination, the characteristic reaction was obtained in five cases, and in one only was the result negative.

I would strongly urge that more extended use be made of this method of testing a diagnosis.

When the results of the bacteriological examination give a negative result, I am of opinion that another specimen should be sent after a few days' interval if the clinical symptoms justify such a course.

It is well to remember that the failure of bacteriological examination to support the clinical diagnosis may not be due to faulty examination, but may be the result of neglect of the printed instructions when the specimen is taken.

The Sanatorium.

The year 1900 has been the busiest year at the Sanatorium since 1892, in which year two more cases were admitted than in 1900.

The Sanatorium Sub-committee have held regular monthly meetings at the Sanatorium, and have kept a strict supervision over the work undertaken there. The Sub-committee have recognised the necessity for an enlargement of the building, so as to meet the necessities of the enlarged Borough and the greater responsibilities incurred, as well as for the accommodation of an enlarged staff.

Provision for the accommodation of cases of Diphtheria is also, I am glad to say, at present engaging the attention of the Authority.

The new permanent Small-pox Hospital has been completed during the year, and is now quite ready for the reception of patients.

During the past year there has happily been no necessity for such accommodation, but we have the satisfaction of knowing that it is ready for occupation. In view of the epidemic in Glasgow and the cases which keep occurring in various other large centres of population around us, the knowledge of our preparedness must be a source of satisfaction to all the inhabitants of the town.

During the year 1900, 131 cases of infectious disease have been admitted to the Sanatorium for treatment. One of these cases which proved fatal was admitted under a mistaken diagnosis, the case was too ill to remove and eventually proved fatal from Cirrhosis of the Liver.

Of the 130 remaining cases, 111 were suffering from Scarlet Fever and 19 from Enteric Fever. Of the 19 cases of Enteric Fever, 17 recovered and two died. Of the 111 cases of Scarlet Fever, 110 recovered and one died.

In 1899, 84 cases were treated in the Sanatorium, 23 of these cases were Enteric Fever, of whom 21 recovered and two died. The remaining 61 cases were Scarlet Fever, of whom 60 recovered and one died.

In the case of Enteric Fever in 1900, the 19 cases admitted to the Sanatorium had a case mortality of 10·52 per centage of cases, whilst 18 cases were treated at home with one death, equal to a case mortality of 5·55 per cent. In the case of Scarlet Fever, the 111 cases treated at the Sanatorium had a case mortality of ·90 per centage of cases. 67 cases were treated at home with only one fatal result, equal to a case mortality of 1·49 per centage of cases.

It should be pointed out that bad cases have the preference in admission to the Sanatorium, that is to say, cases with bad surroundings. Cases favourably situated are usually left at home.

Of the 131 cases admitted to the Sanatorium, 31 were treated by myself and 99 by their own medical attendant. During the past twelve months I visited the Sanatorium one hundred and eleven times.

Insanitary Property.

Since the action taken by this Authority in 1899, as described in my Report for the year, no further attempt has been made to put in force the provisions of the Housing of the Working Classes Act, 1890.

There is, however, more than one place in the town which calls for interference on the part of this Authority. I would point out that the inhabitants of houses which, from their situation and construction, are such that the inmates cannot take any pride in keeping them clean, and those the living rooms of which are so small as to offer no inducement to the inhabitants to remain in them longer than necessary, are by these causes induced to spend their evenings in the streets and public-houses. The use of such habitations as human dwellings should not be permitted.

How this is to be accomplished, except by special legislation, is not at first sight very clear, but I would offer for the consideration of this Authority the suggestion that much benefit might be conferred upon a large class of the community by the erection of workmen's dwellings, in which the inhabitants might live a more natural and healthy life than is possible in their present abodes.

I do not advocate in a town of the size of Lancaster the erection of houses on the "flat" system, as I consider separate, self-contained dwellings, are better adapted to the needs of and more likely to meet with the approval of the class of family which it is sought to benefit. The separate house system is also in my opinion the one which best conserves the family tie, which is so large a factor in the production of a healthy and honourable national life. I would suggest that such houses be erected as an experiment only, but on a sound financial basis. Such houses should consist of a large living room, with two bedrooms over it, and a cock loft of sufficient size to be used as an additional bedroom. No parlour would be required, and no ornamentation of any kind. This would greatly decrease the cost of construction, and would enable a rent to be charged as people in this class of life could afford to pay, whilst at the same time providing fair interest on the cost of construction.

With regard to the situation of these houses, the ideal site would of course be at the end of one of the lines of municipal tramways, for the construction of which powers have been obtained, but in the meantime it will no doubt at once occur to many persons that at the present time it is not impossible to obtain land in the vicinity of some of the large works of the town.

I have thrown out the above merely as a suggestion towards meeting the demand which exists in most towns for a cheap family house for a poor man, and in the hope of reviving a matter which was under consideration some few years ago, and which I consider could more profitably be carried out at this present time. The attention of the local Temperance Party might also be given to this matter, as the results would probably be productive of more good by the promotion of sobriety and temperance than by other and more direct methods.

The Disposal of House and Trade Refuse.

The increasing quantity of this material and the difficulty of providing suitable tips for the disposal of it led the Authority last year to take steps for establishing a destructor. The necessary formalities having been complied with, this very necessary portion of the sanitary equipment of our town is approaching completion, and will, I trust, long before the end of the year be carrying out its useful role.

The form of destructor which has been adopted is one which is so constructed that, by the energy developed by the burning of the refuse, motive power will be provided for the production of electricity. I do not know whether it would be possible to adapt the hot chamber of the apparatus—which, I understand, has a heat of 2,000 degrees—to the purposes of a Crematorium, but if such should be the case and the proposal receive the sanction of the Authority it would place at our disposal a truly sanitary method of disposal of the dead which is advocated by some of our most distinguished sanitarians.

The Water Supply.

The chief event to chronicle in the year 1900 is a very important one, namely, the construction of the Blea Tarn reservoir. This reservoir which although not quite completed, holds one hundred million gallons of water, equal to a 50 days' supply for the district over which it is distributed. When completed it will hold a further twenty million gallons, so that we shall have, in that reservoir alone, a supply which will suffice for 60 days. In addition to this we have the Damas Ghyl reservoir holding thirty million gallons, equal to a supply for 15 days.

At the present time we have therefore in hand some one hundred and thirty million gallons of water, equivalent to a supply for 65 days. In all human probability there is now no fear that it will be necessary to revert to an intermittent supply of water even in the driest summer.

This is a matter which I fear has hardly received the attention from the general public that its importance demands. Last summer when the supply had to be cut off during the night, there were many complaints to be heard from householders as to the inconvenience caused thereby, but as soon as the usual plentiful supply was available, all their interest in the matter immediately subsided.

Of course I am aware that the reason for this state of matters is the profound trust which the Burgesses have in their representatives in the Council, but at the same time, I may give it as my opinion that matters might have been made more easy for the Authority if the public had taken greater pains to prevent any waste of water. If in the time of drought sufficient care had been taken by the consumers, I do not think it would have been necessary to make the supply intermittent.

Food and Drugs.

This matter is in this town in charge of the Police. From the Chief Constable's report I gather that 62 samples were taken and submitted to the public analyst for the Borough, and that the result was satisfactory as it was not found necessary to institute any legal proceedings.

This year a new danger to the public health has been discovered, a danger subtle and far-reaching—subtle on account of the insidious and gradual onset of the symptoms, and far-reaching because it affects a beverage of very general consumption by a large number of the community. I refer, of course, to the presence of appreciable quantities of arsenic in beer and other articles of food which contain glucose.

Although there have been rumours of beer having been voluntarily destroyed in Lancaster, I have no knowledge of it, nor have I heard of the occurrence of any case of neuritis, which is the name of the disease caused by the ingestion of frequent minute doses of arsenic, and no deaths have been registered in Lancaster as having been caused directly or indirectly by arsenic or any of its compounds.

Inspection of Meat.

The Public Abattoir has been visited by me twenty-three times during 1900. On each occasion I was called in to inspect carcases of beasts affected with Tuberculosis. The cases were all of a slight degree, and in no instance was it necessary to invoke the aid of the law. It has been found necessary to seize and destroy three cases of fish, which, either by reason of delay in transit or from other causes such as increase of temperature, had been reduced to such a condition as to become unfit for the food of man. In addition to these, three lots of fruit and a duck were for the same reason seized and destroyed.

Sanitary Conveniences.

I am, I regret to say, unable to record any great increase in the number of these places, although they are more than usually necessary in a town like Lancaster, which in the summer season is visited by a large number of holiday people from the neighbouring seaside resorts. The only alteration I am able to note is the placing of the convenience. taken down from Stonewell a year or two ago, in King Street. This position is a very suitable one, but not so well placed for the accommodation of strangers as it was in its former position. The distress caused by the paucity of these conveniences, and the manner in which they are often hidden away, must be greatly felt by both sexes of visitors.

Cowsheds and Dairies.

We are, I think, on the eve of the promulgation of bye-laws for the control and regulation of these places. There are not many cowsheds or dairies in the Borough of Lancaster, but such as there are should at an early date receive attention, especially in view of the efforts put forth by the Authority to lessen the death-rate and sickness in the town.

These regulations will no doubt materially affect the death-rate from such diseases as Phthisis, Enteric Fever, and Diarrhœa, and should also lessen the rate of infant mortality.

Common Lodging Houses.

The two Common Lodging Houses belonging to this Authority are still kept up, and I am pleased to report that they are clean and salubrious.

A Common Lodging House of very considerable size has been opened in one of the fine old residences of the town, which, by reason of the migration of such people as could afford to pay the rent to the more airy and pleasant suburbs, had become difficult to let as a private residence.

Full details regarding these houses will be found in the appended report of the Sanitary Inspector, from which it will be gathered that the complaint as to the scarcity of beds in such houses has no longer any foundation.

The Inspection of the Town.

House to house inspection has been carried out this year in the district around Dalton Square and Edward Street, and in the portions of Scotforth, Skerton, and Bulk, which by the operation of the Parliamentary Bill obtained in 1900 have been added to the Borough.

Many other smaller portions of the Town have also been visited as occasion required.

Several sanitary defects and nuisances have been thus brought to light, and have been reported to the Committee. These nuisances and defects have in the two former districts all been remedied without there having been any need to have recourse to magisterial proceedings. In the other three districts these matters are receiving consideration, and means will be taken to remedy anything that is wrong.

Matters requiring the Attention of the Authority in the Coming Year.

(1) The enlargement of the Sanatorium.

(2) The inspection of certain portions of the town by the Insanitary Dwellings Sub-committee.

(3) The provision of more public conveniences.

(4) The provision of bye-laws and regulations for Cowsheds and Dairies.

(5) Consideration of the best means of lessening the large number of deaths of Infants.

(6) Increased efforts to lessen the death-rate from Phthisis and other Tubercular Diseases.

(7) The development of the authorised Tramway system at an early date.

(8) The appointment of an additional Sanitary Inspector.

I remain,
Mr. Mayor, Mr. Chairman, and Gentlemen,
Your obedient Servant,
G. R. PARKER.

March 7th, 1901.

TABLE I.

FOR WHOLE DISTRICT.

YEAR.	Popul'n est'm'd to middle of each Year.	BIRTHS.		DEATHS under One Year of Age.		DEATHS at All Ages. Total.		DEATHS in Public Institu-tions.	DEATHS of Non-resid'ts registr'd in District	DEATHS of Non-reside'ts registr'd beyond District.	DEATHS at All Ages. Nett.	
		No.	Rate*	No.	Rate ꝑ 1,000 Births regist'd	No.	Rate*				No	Rate*
1890	30455	923	30·30	154	155	742	24·36	210			532	19·17
1891	31034	977	31·48	153	156	741	23·87	188			553	19·52
1892	32417	947	29·21	150	158	756	23·32	226			530	17·95
1893	33524	991	29·56	165	166	756	22·55	228			528	17·23
1894	34631	1008	29·10	112	111	618	17·84	205			413	13·00
1895	35830	936	26·12	138	147	750	20·93	234			516	15·66
1896	37029	938	25·33	152	163	729	19·68	250			479	14·02
1897	38228	957	25·03	145	151	726	18·99	234			492	13·91
1898	39427	1023	25·94	162	158	758	19·22	243			515	14·09
1899	40626	930	24·63	197	211	806	19·83	236			570	15·10
Av'g's for yrs. 1890-1899	35320	963	27·67	152	157	738	21·05	225			512	15·96
1900	42580	989	25·23	177	178	780	18·31	230	150		630	16·07

* Rates calculated per 1,000 of estimated population.

Area of District in acres (exclusive of area covered by water), 3610 acres.

Total population at all ages, 31,034
Number of inhabited houses, 5479
Average number of persons per house, 5·66
At Census of 1891.

TABLE II.

Names of Localities.	Whole Town.				Town only				Institutions.				4…………………………				5…………………………				6…………………………				7…………………………			
Year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated at middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
1890	30555	923	742	156	27738		532	154	2717		210	2																
1891	31034	977	741	157	28317		553	153	2717		188	4																
1892	32417	947	756	152	29535		530	150	2882		226	2																
1893	33524	991	756	169	30642		528	165	2882		228	4																
1894	34631	1008	618	114	31749		413	112	2882		205	2																
1895	35830	36	750	139	32948		516	138	2882		234	1																
1896	37029	938	729	154	34147		479	152	2882		250	2																
1897	38228	957	726	146	35346		492	145	2882		234	1																
1898	39427	1023	758	171	36545		515	162	2882		243	9																
1899	40626	930	806	201	37744		570	197	2882		236	4																
Averages of Years 1890 to 1899.	35320	963	738	155	32471		512	152	2849		225	3																
1900	42580	989	780	177	39198		550	169	2882		230	8																

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1900.

Notifiable Disease	Cases Notified in Whole District.							Total Cases Notified in each Locality.							No. of Cases removed to Hospital from each Locality.						
	At all Ages.	At Ages—Years.																			
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upw'rds	1	2	3	4	5	6	7	1 Town.	2	3	4	5	6	7
Diphtheria ...	118	1	46	58	4	10	...								...						
Erysipelas ...	15	...	...	2	...	12	1								...						
Scarlet Fever...	181	3	61	99	10	8	...								108						
Enteric Fever...	41	...	3	7	5	25	1								20						
Relapsing Fever	...	...	...	...	...	...	...								...						
Continued Fever	...	...	...	...	...	...	...								...						
Puerperal Fever	...	...	...	...	...	...	...								...						
Plague	...	...	...	...	...	...	...								...						
Measles... ...	71	...	...	...	...	...	...								...						
Totals... ...	426	4	110	166	19	55	2								128						

TABLE IV.

Causes of, and Ages at, Death during Year 1900.

Causes of Death.	Deaths in Whole District at subjoined Ages.							Deaths in Localities (at all Ages).							Deaths in Public Institutions.
	All ages.	Under 1.	1 and under 4	5 and under 15	15 and under 25	25 and under 65	65 and upwards.	Town (alone).	County Asylum	Royal Infirmary.	Union Workhouse.	Ripley Hospital	The Castle.	Bowerham Barr'cks	
Measles	10		8	2				6			4				4
Scarlet Fever	2			2				2							
Whooping Cough	5	4	1					5							
Diphtheria and Membranous Croup	39		23	15		1		37			1			1	2
Croup	2		2					2							
Fever—Enteric	7		1		1	5		3	2	2					4
Epidemic Influenza	17				3	9	5	10	7						7
Diarrhœa	30	21	3	1	1	4		27	3						3
Enteritis	28	22	4			2		28							
Puerperal Fever	1					1		1							
Erysipelas	1					1					1				1
Other Septic Diseases	8	1	1	1		5			2	3	1	2			8
Phthisis	64	1		3	9	51		34	28	1	1				30
Other tubercular diseases	16	5	3	3	1	4		13	2					1	3
Cancer, malignant disease	28					19	9	15	6	5	2				13
Bronchitis	109	31	22			28	28	88	11	5	5				21
Pneumonia	39	4	5	1	2	20	7	28	3	4	3			1	11
Pleurisy	2			1		1				1	1				2
Other diseases of Respiratory Organs	7	2			1	1	3	4	1	2					3
Alcoholism and Cirrhosis of Liver	13					12	1	12			1				1
Venereal disease	2	2						1	1						1
Premature Birth	17	17						17							
Diseases and accidents of parturition	8	2				6		7	1						1
Heart diseases	68	2	1		2	32	31	35	27	2	2		1	1	33
Accidents	19	1	3	5	1	7	2	15		3				1	4
Suicides	1				1			1							
All other causes	237	62	13	9	5	81	67	159	38	17	22		1		78
All causes	780	177	90	43	27	290	153	550	132	45	44	2	2	5	230

TABLE V.

COUNTY OF LANCASTER.

SUMMARY OF MEDICAL OFFICER'S REPORT FOR 1900.

URBAN SANITARY DISTRICT OF LANCASTER.

Area in Statute Acres .....3,610. Population (Census) 1891......31,034. Population, Estimated, 1900......42,580.
Name of Medical Officer of Health..............G. R. PARKER. Salary,..............£110.

Births Registered... Male......495 Female...494 Total......989 | Deaths Registered...... Male..... 276 Female...274 Total...550

Number of Illegitimate Births registered, —— Deaths of Illegitimate Children, ——

Birth Rate	25·23.
Death Rate	14·05.
Rate of Infant Deaths, under one year, to 1,000 Births	170.
Death Rate from the *Seven Principal* Zymotic Diseases, per 1,000 of population	2·06.
Diseases Prevalent?	Diphtheria, Measles, and Whooping Cough.
Period?	Whole year.
What Action taken?	Isolation and Disinfection.
Any Schools Closed?	None.
If so, for what Disease?	
What is the character of the Hospital Accommodation?	Very Good.
Is it Joint or otherwise?	Otherwise.
No. of Beds available for the District?	About 32.
What were the Cases Treated?	Scarlet Fever and Enteric Fever.
Deaths in Hospital?	3.

TABLE V.—*Continued.*

From what Causes?	Scarlet Fever, 1; Enteric Fever, 2.
How is Disinfection carried out?	By Steam Apparatus.
Apparatus used?	Washington-Lyons.
Number of Cases of Infectious Disease Notified?	426.
Are any Diseases not specifically mentioned in the Act notifiable (for instance, Measles, Whooping Cough, Diarrhœa, &c.)? If so, what are they?	No.
Has any action been taken under "The Housing of the Working Classes Act, 1890"?	No.
Have any Houses condemned as unfit for human habitation been closed or demolished? If so, how many?	No.
What is the condition of the Water Supply? Is it subject to your Inspection?	Very Good. No.
Is Scavenging carried out satisfactorily?	Yes.
By Sanitary Authority or Contract?	By Sanitary Authority.
How is the Refuse disposed of?	Carted to a Tip.

TABLE V.—*Continued.*

What is the character of Drainage and the form of Sewage Disposal?	Water carriage.
Canal Boats	In good order.
What is the condition of the Bakehouses?	Good.
Slaughter Houses?	Public Abattoir; no private ones.
Lodging Houses? Are they registered?	Yes.
Dairies, Cowsheds, and Milkshops:—	
Are they periodically inspected?	Yes.
What is their condition?	Fair.
Are they subject to Regulations made under the Order of the Local Government Board?	No. Regulations in preparation.
What amount of air space in cubic feet is required for each Cow?	Not decided.
Have the Factories and Workshops been inspected, and with what result?	Yes. In good order.
Food unfit for Human Consumption: Amount seized?	30 Carcases—23 part condemned, part passed; 7 wholly condemned.

TABLE V.—*Continued.*

Any special report of Medical Officer of Health during the year?	Yes; upon the occurrence of Diphtheria.
Department of Inspector of Nuisances:—	
No. of Notices served	1129.
„ Nuisances remedied	1116.
„ Legal Proceedings taken and result	None.
Smoke:—	
No. of Observations	14.
„ Legal Proceedings taken and result	None.
What is the time limit allowed for the emission of black smoke per hour?	
Has the authority adopted—	
(*a*) "The Infectious Disease (Prevention) Act, 1890."?	No.
(*b*) "The Public Health Acts Amendment Act, 1890."?	Yes.

TABLE VI.

Showing details of Statistics of last seven years.

	1894	1895	1896	1897	1898	1899	1900
Gross population of Lancaster......	34631	35830	37029	38228	39427	40626	42580
Total deaths	618	750	729	726	758	806	780
Gross death-rate	17·84	20·93	19·68	18·99	19·22	19·83	18·31
Population (less 6 Institutions)	31749	32948	34147	35346	36545	37744	39198
Total deaths in Borough (less 6 Institutions)	413	516	479	492	515	570	550
Corrected death-rate	13 00	15·66	14 02	13·91	14·09	15·10	14·05
Deaths of Males	202	259	254	262	255	294	276
Deaths of Females	211	257	225	230	260	276	274
Deaths of Infants under 1 year......	112	138	152	145	162	197	169
Death-rate of Infants per 1,000 registered births	111	147	163	151	158	211	170
Deaths of Children 1 and under 5 years	40	65	48	92	65	88	79
Total deaths under 5 years of age ..	152	203	200	237	227	285	248
Deaths of persons 5 and under 65 years	158	197	180	165	191	178	202
Deaths of persons over 65 years	103	116	99	90	97	107	100
Number of Zymotic deaths	27	43	40	109	81	131	81
Zymotic death-rate................	·85	1·30	1·37	2·85	1·95	3·47	2·06
Number of births..................	1008	936	938	957	1023	930	989
Birth-rate	29 10	26·12	25·33	25·03	25·94	24·63	25·23
Births of Males	526	469	466	480	523	486	495
Births of Females	482	467	472	477	500	444	494

TABLE VII.

A Table showing the number of cases of Zymotic disease treated at home and at the Sanatorium, and comparing the results of the seven years—1894, 1895, 1896, 1897, 1898, 1899, and 1900.

	1894	1895	1896	1897	1898	1899	1900
Total Cases notified	171	1535	183	1294	649	1288	426
Total Cases (treated at home)	119	1491	139	1264	602	1217	299
Recoveries (treated at home)	111	1467	111	1162	533	1184	221
Deaths (treated at home)	8	24	28	102	69	133	78
Total Cases (removed to Sanatorium)	52	44	44	30	47	71	130
Recoveries (Sanatorium)	49	43	44	23	39	68	127
Deaths (Sanatorium)	3	1	0	7	8	3	3
Sanatorium Cases treated by Medical Officer of Health................	17	8	13	1	6	11	31
Sanatorium Cases treated by their own Medical Men	35	36	31	29	41	60	99
Total Recoveries	160	1511	155	1185	572	1152	346
Total Deaths......................	11	24	28	109	77	136	81
Visits made to Sanatorium by Medical Officer of Health................	127	83	139	24	98	138	111

By the kindness of Dr. Schloesser I am able to give the following table showing the total Rainfall and Mean Temperature for each month of the year 1900 :—

TABLE VIII.

Showing Rainfall and Mean Temperature each month.

Month.	Total rainfall in inches.	Mean temperature.	No. rainy days.
January	4·50	38.4	23
February	4·51	37·5	14
March	·61	40·8	7
April	2·51	45·9	18
May....................	1·99	50·7	12
June....................	2·99	58·4	17
July..................	2·95	61·	15
August	6·09	58·5	16
September	1·79	56·6	17
October	7·99	49·7	23
November	4·15	45·6	17
December	8·48	46·5	24
Total...........	48·56		203

TABLE IX.

Showing Deaths from Alcoholic Diseases.

	1899.							1900.						
	July.	August	September	October	November	December	Total for 6 months.	July	August	September	October	November	December	Total for 6 months.
Alcholic Neuritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peripheral Neuritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Multiple Neuritis	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Alcoholism	...	...	...	...	...	...	...	2	2	...	...	1	...	5
Total	...	...	...	...	...	...	...	2	3	...	...	1	...	6

Borough of Lancaster.

Inspector of Nuisances' Annual Report,

For the Year 1900.

To His Worship the Mayor, the Chairman and Members of the Sanitary Committee of the Lancaster Corporation.

Mr. Mayor, Mr. Chairman, and Gentlemen,

I beg to present to you a brief report of the work of the Sanitary Department for the year 1900.

DEATH-RATE.

The death-rate in the town (not including the public institutions) from all causes, was 13·97 per 1,000 of population. The death-rate in 1899 was 15·10. The following figures, taken from the Medical Officer's quarterly reports, show the comparative death-rates in the Borough for the past five years:—

	Annual Death-rate per 1,000 of population.					
	1896	1897	1898	1899	Average 1896-9	1900
First Quarter	15·34	16·00	10·17	14·41	13·98	13·25
Second ,,	14·60	11·09	14·55	13·88	13·53	13·55
Third ,,	12·36	14·02	15·10	19·81	15·32	14·89
Fourth ,,	13·93	10·35	16·74	12·29	13·30	14·20
Year	14·06	12·86	14·14	15·10	14·04	13·97

INFECTIOUS DISEASES.

The number of cases of Infectious Disease notified during the year was 426. The following figures give the comparison since 1889:—

	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Diarrhœa ...	...	...	...	...	...	...	...	...	...	318	344	...
Diphtheria...	3	1	10	20	10	7	8	7	...	6	4	118
Enteric Fever	18	41	53	40	39	47	28	64	55	88	50	41
Erysipelas...	...	...	...	...	...	...	...	...	...	...	...	15*
Measles......	1315	91	111	752	609	46	1405	58	1228	210	780	71*
Puerperal Fever ...	1	2	2	1	2	1	1	1	...	3	2	...
Rotheln......	26	11	3	11	8	3	32	14	1	5	1	...
Scarlatina...	105	173	148	166	180	69	62	32	12	19	123	181
Small Pox...	...	...	...	5	10	2	...	7	...	...	...	...
Total......	1468	319	327	995	858	175	1536	183	1296	649	1304	426

* Measles ceased to be notifiable at the end of March—the figures given are for three months only. Erysipelas was not notifiable before 1900.

Previous to the year 1900, infectious diseases were notifiable under our Local Act of 1880. All authorities were, however, required to adopt the Infectious Disease (Notification) Act of 1889, at the beginning of last year. Two diseases which were not notifiable under the Local Act, now are so, *i.e.*, Erysipelas and Membranous Croup.

Diphtheria.—The cases notified during 1900 number 118, as compared with an average of 7 for the preceding 11 years. As the Medical Officer has prepared an exhaustive report on this subject, I need make no remarks.

Enteric Fever.—The 41 cases notified include 2 at the County Asylum, and 2 at the Workhouse. The total number is lower than the previous 4 years, and is lower than the average of the last 11 years, *i.e.*, 47. In all cases enquiries are made regarding the milk supply, and in most cases an inspection is made of the water supply for the cattle.

Scarlatina.—Once more I have to report an increase in the number of Scarlatina cases, the total for the year being 181 (including 2 at the Barracks and 1 at the Workhouse). The cases were not confined to any particular part of the town.

Measles.—Application having been made to the Local Government Board, Measles was crossed off the list of notifiable diseases in March last. During the first three months of the year 71 cases were notified. The disease has been very prevalent during the remaining nine months.

The disinfection of premises where cases of infectious disease are located, is well carried out; the houses, drains, &c. (except when prohibited by special circumstances) being disinfected daily. In addition the bedding from a large number of houses was removed to the Disinfector at the Sanatorium. The following is a list of articles so disinfected:—

Beds	35
Blankets	256
Bolsters	23
Bolster Slips	1
Counterpanes	95
Mattresses	18
Pillows	72
Rugs	10
Sheets	35
Sundries	26
Wearing Apparel	1687
Total	2258

SANATORIUM.

The number of patients treated in the Sanatorium during 1900, was 131; 127 were discharged, and 4 died.

The following figures show the number of cases admitted since the year in which the Sanatorium was built (1891):

	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Diphtheria	...	2	...	...	...	...	...	...	...	...
Enteric Fever	27	22	8	20	12	16	23	36	23	20
Scarlatina...............	81	107	56	33	32	22	7	10	61	111
Small-pox...............	..	1	8	1	..	7	...	...	...	...
Total	108	132	72	54	44	45	30	46	84	131
No. of Deaths.........	7	11	5	4	...	1	6	7	3	4

The staff at the Sanatorium consists of Mrs. Wharfe, as matron, two certified nurses, three probationers, one convalescent room attendant, three servants, and a porter. Extra nurses have been engaged when required. The cost of maintenance of patients and staff, for each month of the year, is shown on the following table:—

Month.	Total Cost.			No. of Days.			Cost per head per day.			
				Patients	Staff.	Total.	Patients		Total.	
	£	s.	d.				s.	d.	s.	d.
January...	45	7	1	458	299	757	1	11·76	1	2·37
February.	33	19	4	457	247	704	1	5·60		11·57
March ...	45	4	4	515	289	804	1	9.07	1	1·49
April......	41	16	8	600	293	893	1	4·73		11·24
May	38	13	4	527	291	818	1	5·60		11·34
June	43	10	4	667	275	942	1	3·65		11·08
July	36	18	10	579	292	871	1	3·31		10·17
August ...	36	10	11	455	262	717	1	7·27	1	0·23
September	38	0	1	724	303	1027	1	0·59		8·88
October...	47	19	2	824	351	1175	1	1·96		9·87
November	44	17	0	464	334	798	1	11·19	1	1·48
December	35	8	9	364	330	694	1	11·37	1	0·26
Total...	488	5	10	6634	3566	10200	1	5·66		11·48

There have been no cases of Small-pox during the year, but it is satisfactory to know that we have a good substantial hospital ready for use. There are caretakers in charge of the hospital, who reside there.

COMMON LODGING HOUSES.

The Common Lodging-houses have been visited regularly, and on the whole have been kept in a satisfactory condition. Three houses (37, China Street; 16, Bridge Lane; and 8, Aldcliffe Street) have been removed from the register, and two other houses (Water Street and 20, Marton Street) have been registered. The registration of one house was refused. The number of registered houses on 31st December was 14, with an accommodation for 289 adults. The following figures (adults only) taken from the weekly returns of the lodging-house keepers show the number of lodgers as compared with the accommodation provided:—

Month.	Registered Accom.	Number of Lodgers.		
		Average.	Maximum.	Minimum.
January	218	195	204	179
February	218	192	202	182
March	218	198	206	191
April	230	205	222	181
May...	226	214	223	208
June...	226	210	226	194
July...	226	207	222	192
August	293	245	261	220
September	293	239	250	218
October	293	223	241	199
November	293	223	243	204
December	289	197	248	150

INSANITARY DWELLINGS.

No large scheme for improving the insanitary areas of the town has been as yet attempted since the Ann Street Improvement. In several districts great improvements could be effected, and I trust some of those improvements will shortly be carried out.

ASHES.

9,816 cart loads and 147 wagon loads (equalling about 8,803 tons) of ashes have been removed during the year. The refuse has been taken to tips on the Marsh, Skerton, the Park, &c. The Destructor is well in hand, and should be in working order before very long.

SLAUGHTER HOUSES.

The Corporation Slaughter houses have been regularly visited, and are kept in a very satisfactory condition. There are two private slaughter houses in the newly added area of the Borough.

The number of animals slaughtered at the public slaughter house for food during the year was as follows :—

	Total.	Average per week.	Total 1899.
Beasts	2957	57	2927
Calves	458	9	430
Sheep	13421	258	14000
Pigs	921	17	904
Total ...	17757	341	18261

UNSOUND FOOD

We have not been troubled very much during the year with unsound food. The chief trouble has been tuberculosis, but the cases were none of them so serious as to make magisterial proceedings necessary. The number of cases dealt with is as follows:—

Beasts	23
Fish	3
Miscellaneous	4
	30

The cases were dealt with in the following manner:

Condemned and destroyed	7
Passed for food	—
Part passed and part condemned	23
	30

URINALS.

The public urinals are regularly cleansed, and are in good condition. More public conveniences are wanted in the town for both sexes. Complaints are frequently made of the entrances to yards and courts being used as urinals; a nuisance which might be avoided if larger accommodation could be provided.

The following schedule gives in brief the details of the cases attended to during the year:—

Accumulation and Deposit of Offensive Matter	68
Ashpits not in accordance with requirements	237
Bakehouses visited from time to time	10
Canal Boats visited	46
do. Infringement of Regulations	3
Chipped Potato and Fried Fish Shops visited from time to time	6
Common Lodging Houses do. do.	17
do. do. Inspected for Registration	3
do. do. Registered	2
do. do. Crossed off Register	3
do. do. Infringement of Bye-laws	7

Common Privies not satisfactory	5
Dangerous buildings, chimney stacks, walls, &c.	14
Dangerous cellar doors, &c., on Footpaths	21
Drains, Defective...	201
do. Tested and found satisfactory...	24
Factories and Workshops Inspected (*re* overcrowding, &c.)... ...	6
Filthy Premises	21
Houses unfit for Human Habitation	5
Infectious Diseases	426
Lodging Houses (unregistered) visited	4
Manure Pits not in accordance with requirements	27
Miscellaneous cases	60
Overcrowded Dwellings, &c.	17
Pavement in Yards, &c., bad	26
Premises without sufficient w.c. accommodation	10
Smoke Nuisance	14
Spouts defective	108
Stagnant water in cellars, &c.	31
Unsound Food	30
Vans (Hawkers') visited...	8
Vessels visited (Port of Lancaster)	101
Waste Pipes defective	15
Waste Pipes connected with drain	11
Water Closets defective...	220
Water Pipes and Supply defective	47
Total number of cases	1854

I remain, Gentlemen,

Your obedient Servant,

FRED W. SMITH,

ASSOC. SAN. INST.,

Inspector of Nuisances.

Sanitary Office,
Lancaster, January, 1901.

To the Urban Sanitary Authority of the Borough of Lancaster.

Mr. Mayor, Mr. Chairman, and Gentlemen,

I beg to present to you my Report for the Quarter ending March 31st, 1900.

Total deaths occurring in the Borough of Lancaster during the quarter numbered 201, equal to an annual death-rate of 19·22 per 1000 of population.

During the corresponding quarter of last year the deaths numbered 197, and the annual death-rate was 19·39 per 1000 of population.

The deaths in the Borough of Lancaster (excluding the six Institutions) numbered 129, equal to an annual corrected death-rate of 13·25 per 1000 of population.

Last year, during the corresponding quarter, there were 136 such deaths, equal to an annual corrected death-rate of 14·41 per 1000 of population.

Of the 129 deaths occurring in the Borough, 63 were those of males, and 69 those of females; 35 occurred in children under 5 years of age, and 94 in persons over that age.

The deaths in the County Lunatic Asylum were 46 in number, in the Union Workhouse there were 16, in the Royal Lancaster Infirmary 8, in the Ripley Hospital 1, and in the Castle 1—making a total of 72 deaths in the Institutions.

Deaths from the 7 principal zymotic diseases during this quarter numbered 6, namely:—

Enteric Fever	1
Measles	2
Diphtheria..	3
	6

equal to an annual zymotic death-rate of ·57 per 1000 of population.

During the corresponding quarter of last year there were 16 such deaths, namely:—

Measles	3
Enteric Fever	4
Whooping Cough	8
Puerperal Fever	1
	16

equal to an annual zymotic death-rate of 1·57 per 1000 of population.

One hundred and forty-six cases of infectious disease have been reported during the last quarter, namely:—

Scarlet Fever	47
Diphtheria	12
Enteric Fever	9
Measles	71
Erysipelas	7
	146

During the corresponding quarter of 1899, the number of these cases notified was 346, namely:—

Enteric Fever	11
Measles	331
Scarlet Fever	2
Puerperal Fever	1
Rotheln	1
	346

The occurrence of twelve cases of Diphtheria in the last three months is very unusual for this district, where heretofore the disease has been very rare. The cases appear to be for the most part sporadic, and only in very few instances has it been possible to consider that there has been any connection between the cases. Most of these cases have been verified by bacteriological examination. I have heard of several cases during this same period in the adjacent districts, so whatever the cause may be, it is evidently one which affects a considerable tract of country.

Births registered in the Borough during this quarter were 237, comprised of 119 males and 118 females, equal to an annual birth-rate of 22·66 per 1000 of population.

In the corresponding quarter of 1899, there were 240 births, 116 males and 124 females, equal to an annual birth-rate of 23·63 per 1000 of population.

I remain,
Mr. Mayor, Mr. Chairman, and Gentlemen,
Your obedient servant,
G. R. PARKER.

May 28*th*, 1900.

To the Chairman and Members of the Lancaster Urban Sanitary Authority.

MR. CHAIRMAN AND GENTLEMEN,

I beg to present to you my report for the quarter ending June 30th, 1900.

Total Deaths occuring in the Borough of Lancaster during the quarter were 195, equal to a gross annual death-rate of 18·64 per 1000 of population.

During the corresponding quarter of last year the deaths numbered 196, equal to a gross annual death-rate of 19·29 per 1000 of population.

The Deaths in the Borough of Lancaster (excluding the six Institutions) number 132, equal to an annual corrected death-rate of 13·55 per 1000 of population.

Of these 132 deaths, 65 were those of males, and 67 those of females. Sixty-two occurred in children under five years of age, and 70 in persons over that age.

During the corresponding quarter of last year, those deaths numbered 131, equal to an annual death-rate of 13·88 per 1000 of population.

Deaths in the County Asylum, 40 ; in the Union Workhouse, 10 ; in the Royal Infirmary, 12 ; and 1 in Bowerham Barracks.

Deaths from the seven zymotic diseases 24, viz.:—Diphtheria 16; Enteric Fever 2; Diarrhœa, 5; and Measles, 1; equal to an annual zymotic death-rate of 2·29 per 1000 of population.

During the corresponding quarter of 1899 these Deaths numbered 26, viz.:—Enteric Fever 2; Measles 20; Diphtheria 1; and Whooping Cough, 3; equal to an annual zymotic death-rate of 2·75 per 1000 of population.

Eighty-one cases of infectious disease have been reported to me this quarter, viz.:—

Scarlet Fever	45
Diphtheria	25
Enteric Fever	8
Erysipelas	3
Total	81

Births, registered in the Borough during the quarter ending June 30th, 1900, were 271, comprised of 123 males and 148 females, and equal to an annual birth-rate of 25·91 per 1,000 of population.

In the Corresponding quarter of 1899, there were 246 births—144 males and 102 females—equal to an annual birth-rate of 24·22 per 1000 of population.

I remain,

Mr. Chairman and Gentleman,

Your obedient servant,

G. R. PARKER,

Medical Officer of Health.

To the Chairman and Members of the Lancaster Urban Sanitary Authority.

Mr. Mayor, Mr. Chairman, and Gentlemen,

I beg to present to you my Report for the quarter ending September 30th, 1900.

Total deaths occurring in the Borough of Lancaster during the quarter number 197, equal to an annual death-rate of 18·84 per 1,000 of population.

During the corresponding quarter of last year the deaths numbered 238, equal to a gross annual death-rate of 23·43 per 1,000 of population.

The deaths in the Borough of Lancaster (excluding the six Institutions) numbered 145, equal to an annual corrected death-rate of 14·89 per 1,000 of population.

Of these 145 deaths, 76 were those of males, and 69 those of females. Seventy-five were under 5 years of age, and 70 were over that age.

During the corresponding quarter of last year, the deaths (exclusive of the six Institutions) were 187, equal to an annual corrected death-rate of 19·81 per 1,000 of population.

Deaths in the County Asylum, 23; in the Workhouse, 11; in the Royal Infirmary, 16; and 2 in the Barracks.

Thirty-one deaths from zymotic diseases have been reported to me during the past quarter, viz:—

Diarrhœa	16
Diphtheria...	7
Enteric Fever	2
Measles	3
Scarlet Fever	1
Whooping Cough	1
Puerperal Septicœmia	1
	31

—equal to an annual zymotic death-rate of 2·96 per 1,000 of population.

During the corresponding quarter of 1899, the deaths from the seven principal zymotic diseases numbered 76, viz:—Diarrhœa, 70; Enteric Fever, 2; Puerperal Fever, 1; and 3 Measles—equal to an annual zymotic death-rate of 7·48 per 1,000 of population.

Ninety cases of infectious diseases have been reported to me during the past quarter, namely:—

Scarlet Fever	47
Diphtheria...	27
Enteric Fever	13
Erysipelas	3
	90

During the corresponding quarter of 1899, 400 cases of infectious diseases were reported, viz:—Scarlet Fever, 39; Enteric Fever, 16; Measles, 15; Diarrhœa, 329: and Puerperal Fever, 1.

Births registered in the Borough during the past quarter were 249—132 males and 117 females—equal to an annual birth-rate of 23·81 per 1,000 of population.

In the corresponding quarter of 1899, there were 227 births registered—112 males and 115 females—equal to an annual birth-rate of 22·35 per 1,000 of population.

I remain,

Mr. Mayor, Mr. Chairman, and Gentlemen,

Your obedient servant,

October 15th, 1900. G. R. PARKER.

To the Urban Sanitary Authority of the Borough of Lancaster.

MR. MAYOR, MR. CHAIRMAN, AND GENTLEMEN,

I beg to present to you my Report for the quarter ending December 31st, 1900.

Total Deaths occurring in the Borough of Lancaster during this quarter were 187, equal to an annual gross death-rate of 17·02 per 1,000 of population.

During the corresponding period of last year the deaths numbered 175, equal to a gross annual death-rate of 17·23 per 1,000 of population.

The Deaths in the Borough of Lancaster for the same period (excluding the Six Principal Institutions) numbered 144, equal to an annual corrected death-rate of 14·20 per 1,000 of population.

During the corresponding quarter of last year these Deaths numbered 116, equal to an annual corrected death-rate of 12·29 per 1,000 of population.

Of these 144 Deaths, 72 were those of males and 72 those of females—77 occurred in children under 5 years of age, and 67 in persons over that age.

Deaths in the County Lunatic Asylum were 23 ; in the Workhouse, 7 ; in the Royal Infirmary, 9 ; in the Ripley Hospital, 1 ; in the Castle, 1 ; and 2 in the Bowerham Barracks. Total, 43.

Deaths from the principal zymotic diseases were, viz.:—

Measles	6
Diarrhœa	6
Diphtheria	12
Enteric Fever	2
Whooping Cough	4
Scarlet Fever	1
	31

—equal to an annual zymotic death-rate of 2·82 per 1,000 of population.

During the cerresponding period of last year there were 15 such deaths, viz.:—Measles, 2 ; Diarrhœa, 4 ; Enteric Fever, 1 ; Scarlet Fever, 4 ; and Diphtheria, 4 ; equal to an annual zymotic death-rate of 1·58 per 1,000 of population.

One hundred and ten cases of infectious disease have been reported to me during the past quarter, viz.:—

Scarlet Fever	42
Diphtheria	55
Enteric Fever	11
Erysipelas	2
	110

Births registered in the Borough during the last quarter number 232—121 were those of males and 111 those of females, equal to an annual birth-rate of 21·11 per 1,000 of population.

In the corresponding quarter of 1899 the Births of 217 children were registered—114 were those of males and 103 those of females, equal to an annual birth-rate of 21·36 per 1,000 of population.

I remain,

Mr. Mayor, Mr. Chairman, and Gentlemen,

Your obedient servant,

G. R. PARKER,

Medical Officer of Health.

PORT OF LANCASTER.

ANNUAL REPORT

OF

Medical Officer of Health.

To the Mayor, Aldermen, and Councillors of the Borough of Lancaster, being the Sanitary Authority for the Port of Lancaster.

Mr. Mayor, Mr. Chairman, and Gentlemen,

The estimated marine population of the Port remains as in previous years at 63.

My thanks are again due to Captain Russell, who has supplied me with the various Port statistics.

The total number of vessels entering the Port during the year 1900 was 167, having a total tonnage of 23,741 tons, and total hands about 885.

In 1899 the total number of vessels was 185, with a gross tonnage of 39,082 tons, and total hands about 1452.

Of the 167 vessels entering the Port, 150 were engaged in the home trade, and 17 in the foreign trade.

Of the 150 home trade vessels all were British, the total tonnage was 15,624 tons, and total hands about 650.

The following table shows the number of home trade vessels arriving at the Port during the past twelve years, with their total tonnage and total hands:—

Year.	No. of Vessels	Tonnage.	Hands.
1889	234	23476	1102
1890	246	24208	980
1891	171	16612	684
1892	129	13307	855
1893	128	13727	640
1894	127	19297	605
1895	124	13583	607
1896	174	17334	800
1897	179	16213	850
1898	133	15021	630
1899	135	11332	675
1900	150	15624	650

Of the vessels engaged in the foreign trade, 5 were of British nationality and 12 were foreign.

The total tonnage was 8,117 tons, with total hands about 235, of which the British vessels carried 69 and the foreign 166.

The following table shows the number of foreign trade vessels entering the Port during the last twelve years, with their total tonnage and total hands :—

Year.	No. of Vessels	Tonnage.	Hands.
1889	38	13094	338
1890	42	12046	377
1891	36	11094	331
1892	38	11232	380
1893	23	7742	236
1894	16	4894	136
1895	21	6214	228
1896	34	13675	453
1897	24	8939	327
1898	52	24884	770
1899	50	27750	777
1900	17	8117	235

It may be noticed from these tables that, although the home trade about held its own, the foreign trade at the Port in 1900 had shrunk to about one-third of its dimensions in the two preceding years.

On account of the continued spread of Bubonic plague, and especially its appearance at Glasgow, increased vigilance was necessitated. I am happy to say, however, that we had no cases, not even one of suspicion.

It is however at these small ports that the occurrence of a case is most to be dreaded, as, owing to the small revenue, extensive preparations cannot be made.

To make such preparations as are found necessary in a large Port, even on a small scale, would raise the expenditure of a small Port to a point quite out of proportion, not only to its shipping, but what is perhaps more important, its revenue.

It would be a great relief, not only in money, but in mental anxiety, if the cost of the measures required to ward off the importation of diseases such as Plague and Cholera, in the smaller Ports at least, were defrayed from the Imperial exchequer.

The members of this Authority may remember that during 1900, it became obligatory on them to erect the small wooden portable Hospital at Glasson, for the reception of any possible cases of Bubonic Plague which might be imported. The Hospital was visited by an Inspector of the Local Government Board, whose report upon the structure came before this Commfttee, and received its consideration. The erection of the Hospital led to some difficulty about the site, owing to a dispute between the landlord and the tenant, as to who was to receive the rent. This difficulty has however, I understand, been overcome.

The water supply for the vessels in the Port remains the same as before. Water is supplied from the Lancaster water works upon certain conditions.

No case of infectious sickness in the Port has come to my knowledge during the year 1900.

I remain,
Mr. Mayor, Mr. Chairman, and Gentlemen,
Your obedient servant,
G. R. PARKER.

March 13*th*, 1901.